## SURVEY SYMBOL

- BILLBOARD
- BORE HOLE or DRILL HOLE
- LANDSCAPE BOULDER
- WELL
- FLAG POLE
- SATELLITE DISH
- POST
- MAIL BOX
- TWO POLE SIGN
- ONE POLE SIGN
- PARKING METER
- STOP SIGN
- GAS REGULATOR
- GAS RISER
- GAS TEST STATION
- GAS METER
- GAS VALVE
- UTILITY POLE
- GUY POLE
- GUY ANCHOR
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- CABLE TV PEDESTAL
- ELECTRIC MANHOLE
- ELECTRIC METER
- TRANSFORMER/ELECTRIC PAD
- AIR CONDITIONER
- HAND HOLE
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL BOX
- SIGNAL MANHOLE
- STORM MANHOLE
- AREA INLET
- ROOF DRAIN
- CURB INLET
- SANITARY MANHOLE
- CLEANOUT
- YARD HYDRANT
- WATER SPRINKLER
- WATER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- LIGHT
- FLOOD LIGHT
- LUMINARY (STREET LIGHT)
- MANHOLE COVER -Shows eccentric manholes
- MISCELLANEOUS TOPO ITEM
- FINISH FLOOR
- MIN. OPENING ELEV.
- STUMP
- SHRUB
- DECIDUOUS TREE
- EVERGREEN SHRUB
- EVERGREEN TREE

SURVEY MONUMENTATION

- BENCHMARK
- TEMPORARY BENCHMARK
- R/W MARKER
- FOUND SURVEY MONUMENT
- SET SURVEY MONUMENT
- SET SURVEY MONUMENT IN CONCRETE
- CALCULATED SURVEY POINT
- CHISELED CROSS FOUND
- CHISELED CROSS SET

## CIVIL LINETYPE LEGEND

- FENCE WIRE
- FENCE CHAIN LINK
- FENCE WOOD
- BACK OF CURB
- GUTTER
- ASPHALT
- UGT — UNDER GROUND TELEPHONE
- OHT — OVERHEAD TELEPHONE
- UGCT — UNDER GROUND TELEVISION
- OHCT — OVERHEAD CABLE TELEVISION
- FO — FIBER OPTICS
- G — GAS LINE Thru 12"
- OHE — OVERHEAD ELECTRIC
- UGE — UNDER GROUND ELECTRIC
- SAN — SANITARY SEWER < 8"
- SIZE — SANITARY SEWER > 8" (TO SCALE)
- W — WATER LINE
- FP — FIRE PROTECTION LINE
- STM — STORM SEWER < 8"
- STORM SEWER > 8" (TO SCALE)
- CENTERLINE
- R/W — R/W LINE
- LOT LINE
- PL — PROPERTY LINE
- SECTION LINE
- BOUNDARY LINE
- 5' CONTOUR
- 1' CONTOUR
- SETBACK LINE
- COMMUNICATION LINE
- EASEMENT TEMPORARY CONSTRUCTION
- EASEMENT PERMANENT
- TRAVEL WAY
- BREAK LINE
- EDGE OF GRAVEL

REMOVE AND REPLACE ASPHALT PAVEMENT

REMOVE AND REPLACE CONCRETE PAVEMENT

NEW CONCRETE PAVEMENT

# PROJECT DRAWINGS FOR
# CENTRAL PARK (PS #05) AND ROCKFIRE NORTH (PS #78) PUMP STATIONS ODOR CONTROL IMPROVEMENTS

## TOPEKA, KANSAS

## WPC PROJECT NO. 291139.01

## SEPTEMBER 2025

CITY OF TOPEKA UTILITIES

*SEE DRAWING G-002 FOR LOCATION MAPS

## UTILITY CONTACTS:

**Cable TV**
Cox Communications
931 SW Henderson Rd.
Topeka, KS 66615
Glenn Calhoon
(785)215-6705
(785)207-1693
glenn.calhoon@cox.com

**Electric**
Evergy
PO Box 889
4001 NW 14th St.
Topeka, KS 66603
Aaron Spreer
(785)865-4850
(785)575-6300
aaron.spreer@evergy.com

**Fiber Optic - City of Topeka**
City of Topeka, Info. Tech.
620 SE Madison St., 3rd Floor
Topeka, KS 66603
Mark Biswell
(785)368-3718
mbiswell@topeka.org

**Fiber Optic - LUMEN**
LUMEN
100 Centurylink Dr.
Monroe, LA 71203
Luke Hempler
(816)308-9639
luke.hempler@lumen.com
Relocations: relocations@lumen.com

**Fiber Optic - USD 501**
USD 501, Info. Tech.
1900 SW Hope St.
Topeka, KS 66604
Dickie Hanson
(785)438-4750
dhanson@tps501.org

**Fiber Optic - KsFiberNet**
Kansas Fiber Network LLC
10875 Benson, Suite 250
Overland Park, KS 66210
Brad Burger
(913)213-2937
bburger@ksfiber.net

**Fiber Optic - AT&T Transmission**
AT&T Services, Inc.
1425 Oak St.
Kansas City, MO 64016
Lenny Vohs
(770)335-8244
lv2121@att.com

**Fiber Optic - Giant Communications**
Giant Communications
515 S. Kansas Ave. Ste. 210
Topeka, KS 66603
Lance Lyman
(785)362-3312
lancelyman@giantcomm.net

**Telephone/Fiber Optics**
Verizon/MCI
Jeffrey Wiard
(620)242-6647
jeffrey.wiard@verizonwireless.com

**Gas**
Kansas Gas Service
200 E 1st St.
Topeka, KS 66603-3603
Alexander Amory
(785)559-8879
alexander.amory@onegas.com
For Gas Leaks call 1-888-482-4950
911 must also be called immediately

**Sanitary/Storm Sewer**
City of Topeka, WPC Div.
1115 NE Poplar St.
Topeka, KS 66616
Darrin A. Coffland
(785)368-2467
dcoffland@topeka.org

**Telephone**
AT&T Corp.
220 SE 6th Ave., Ste. 236
Topeka, KS 66606
Randall Nicely
(785)596-9903
rn0380@att.com
or
Daniel Chase
(785)596-9897
dc2553@att.com

**Traffic Signal**
City of Topeka, Traffic Ops.
927 NW Harrison St.
Topeka, KS 66612
Duane Morris
(785)368-3913
dmorris@topeka.org

**Water**
City of Topeka, Water Dist.
3245 NW Waterworks Dr.
Topeka, KS 66606
Duncan Theuri
(785)368-0152
dtheuri@topeka.org

NOTE:
ALL CONSTRUCTION METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE STANDARD TECHNICAL SPECIFICATIONS AND CURRENT REVISIONS ON FILE IN THE OFFICE OF THE CITY ENGINEER, CITY OF TOPEKA, KANSAS.

Know what's below. Call 811 before you dig.

**Always contact Kansas One-Call first! Phone 800-DIG-SAFE or simply dial '811' or visit us at www.kansasonecall.com**

"KANSAS ONE-CALL" IS THE UNDERGROUND UTILITY NOTIFICATION CENTER FOR THE STATE OF KANSAS. THROUGH THIS FACILITY, YOU CAN NOTIFY OPERATORS OF UNDERGROUND FACILITIES OF PROPOSED EXCAVATIONS TO REQUEST THAT THE UNDERGROUND FACILITIES BE MARKED BEFORE YOU DIG.

KANSAS STATUTE ANNOTATED #66-1801 THROUGH #66-1815 REQUIRES ANYONE WHO ENGAGES IN ANY TYPE OF EXCAVATION TO PROVIDE ADVANCE NOTICE OF AT LEAST TWO FULL WORKING DAYS, BUT NOT MORE THAN 15 CALENDAR DAYS, EXCLUDING WEEKENDS AND HOLIDAYS.

CONTRACTOR SHALL COORDINATE ACCESS WITH THE RESIDENTS DURING CONSTRUCTION.
THE PERSON WHO IS DOING THE WORK IS RESPONSIBLE FOR CALLING KANSAS ONE-CALL. IF THE OWNER CONTRACTS WITH A PROFESSIONAL EXCAVATOR TO DO THE EXCAVATION, THEN THE PROFESSIONAL EXCAVATOR IS RESPONSIBLE FOR CALLING KANSAS ONE-CALL.

THE SERVICE PROVIDED BY KANSAS ONE-CALL TO EXCAVATORS IS FREE OF CHARGE.
CALL 785-368-3111 FOR EMERGENCIES WITH CITY OF TOPEKA UTILITIES.

**CONFORMED SET APRIL 2026**

CITY OF TOPEKA, KANSAS
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION
DEPARTMENT OF UTILITIES

**RELEASED FOR CONSTRUCTION**

CITY ENGINEER _____ DATE _____

REVIEWED BY:
WASTEWATER ENGINEER SAMUEL RAMIREZ, P.E. _____ DATE _____

ATTEST:
CITY CLERK
DATE: _____

Bartlett & West
Driving Community and Industry Forward, Together.

DATE: SEPTEMBER 2025
W.O.: 19637.011
SHEET: 1 OF 52

WILLIAM J. NAEGER, P.E.
NO. 11285
The following drawings are intended to be authenticated by my seal:
MEP000, MEP101, P-101, P-102, P-501, M-101, M-102, M-501, M-601, M-701, E-101, E-102, E-103, E-501, E-111, E-502

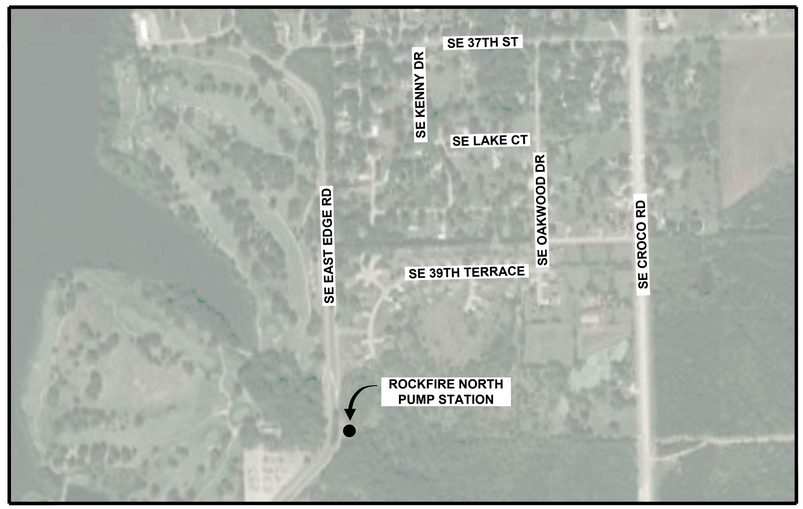
MICHAEL J. NEUFELD, P.E.
NO. 20097
The following drawings are intended to be authenticated by my seal:
S-001, S-101, S-501, S-502

ETHAN P. MEYER, P.E.
NO. 29115
The following drawings are intended to be authenticated by my seal:
G-001, G-002, N-001, N-002, N-003, N-004, N-005, C-101, C-102, C-103, D-101, D-102, D-301, D-302, D-303, N-011, N-012, C-111, D-311, D-501

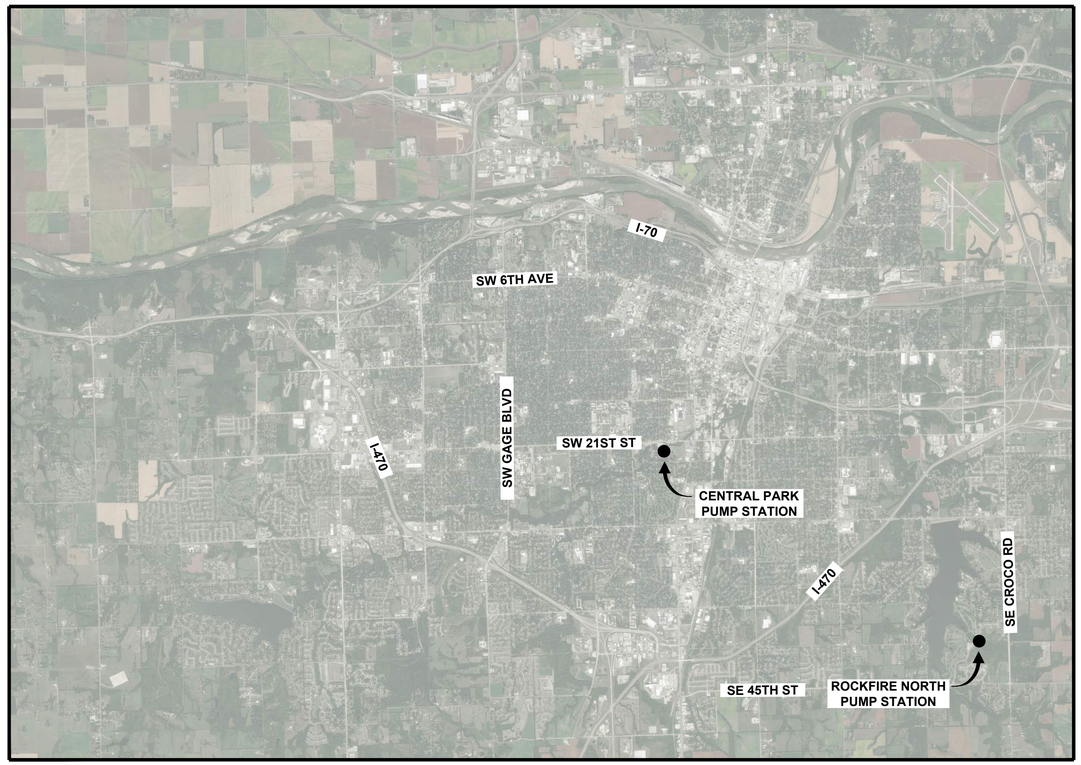
BETH VALDIVIA, AIA
NO. 7369
The following drawings are intended to be authenticated by my seal:
G-004, A-100, A-101, A-102, A-103, A-200, A-201, A-300, A-500, A-501, A-600

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.


**CENTRAL PARK PUMP STATION LOCATION MAP**
SCALE: NTS




**ROCKFIRE NORTH PUMP STATION LOCATION MAP**
SCALE: NTS




**CITY OF TOPEKA LOCATION MAP**
SCALE: NTS

## INDEX



| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 3 | 12/10/2025 | CONFORMED SET | EPM |


Bartlett & West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
www.bartlettwest.com


# ODOR CONTROL IMPROVEMENTS LOCATION MAP & INDEX

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

ETHAN PAUL MEYER
LICENSED
29115
4-16-26
KANSAS
PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | EPM |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | G-002 |
| SHEET NO: | 2 of 52 |




Last edit on: 12/8/2025 12:54 PM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_G_Cover.dwg Layout Name: LOCATION Plotted By: JRH01823 Plotted on: 12/8/2025 3:32:22 PM

## GENERAL NOTES

1. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS PRIOR TO BEGINNING CONSTRUCTION OF THIS PROJECT.

2. THE CONTRACTOR MUST BE FAMILIAR WITH THE PROPOSED PROJECTS EXISTING CONDITIONS. THIS INCLUDES, BUT IS NOT LIMITED TO DIFFICULT CONSTRUCTION AROUND EXISTING TREES AND UTILITIES, CONNECTING TO EXISTING FACILITIES AND SMALL VERTICAL GRADE ADJUSTMENTS NECESSARY TO AVOID CONSTRUCTION CONFLICTS. THE CONTRACTOR MUST ADJUST PRICING TO ACCOUNT FOR THESE DIFFICULT CONSTRUCTION SITUATIONS. NO COMPENSATION SHALL BE GIVEN FOR EXISTING SURFACE CONDITIONS THAT MAY CAUSE DIFFICULT FIELD CONSTRUCTION MODIFICATIONS. SOILS ARE EXPANSIVE. CONTRACTOR SHALL EXPECT EXCAVATION TO INCLUDE INDIVIDUAL ROCKS OF VARYING SIZE. CONTRACTOR SHALL ALSO EXPECT GROUNDWATER IN THE EXCAVATION.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   A) ALL LICENSES AND PERMITS REQUIRED FOR CONSTRUCTION.
   B) THE NOTIFICATION OF THE PROPER AUTHORITIES PRIOR TO CONSTRUCTION.
   C) THE WEEKLY PICKUP AND REMOVAL OF RESIDENTIAL TRASH ALONG THE PROJECT FOR THE DURATION OF CONSTRUCTION.

4. THE CONTRACTOR SHALL SUBMIT ALL TESTING AND TIE-IN PLANS.

5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ACCESS TO ALL PROPERTIES BE PROVIDED DURING CONSTRUCTION OF THE PROJECT.

6. CONSTRUCTION STAKING SHALL BE PROVIDED BY THE CONTRACTOR.

7. CONTACT AFFECTED OWNER(S) A MINIMUM OF 48 HOURS PRIOR TO HALTING OF UTILITY SERVICES. UNDER NO CIRCUMSTANCE SHALL ANY UTILITY SERVICE BE DISCONTINUED FOR MORE THAN ONE (1) 12-HOUR PERIOD.

8. THE CONTRACTOR IS RESPONSIBLE FOR THE PROVISION OF ALL MATERIAL, TOOLS, EQUIPMENT AND LABOR NECESSARY TO CONTROL EROSION, SILTATION, AND SEDIMENT DISCHARGES INTO PAVED AREAS, ADJACENT PROPERTIES, DOWNSTREAM SYSTEMS, OR RECEIVING CHANNELS. THIS SHALL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION AND UNTIL SUITABLE GROUND COVER IS ESTABLISHED FOR ALL DISTURBED AREAS. IF ANY METHOD OF CONTROL FAILS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY DEBRIS, SILT, OR MUD & RESTORING THE AREA TO ORIGINAL OR BETTER CONDITION. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY, SO THAT THE OWNER CAN REVIEW THE CONTRACTOR'S PROPOSED METHOD OF REPAIR.

9. ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). CONTRACTOR SHALL PREPARE AND PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE CITY OF TOPEKA REQUIREMENTS.

10. THE INFORMATION SHOWN IN THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES FOR FIELD LOCATION OF ALL UNDERGROUND UTILITY LINES PRIOR TO ANY EXCAVATION AND FOR MAKING HIS OWN VERIFICATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL POTHOLE AND SURVEY ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION OF ANY SUBSURFACE ELEMENT OF THE PROJECT. THIS SURVEY INFORMATION SHALL BE FORWARDED TO THE PROJECT ENGINEER FOR REVIEW. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION ON ANY SUBSURFACE ELEMENT ON THE PROJECT WITHOUT THE APPROVAL OF THE PROJECT ENGINEER. DAMAGE TO ANY UTILITIES OR STRUCTURES DURING EXCAVATION AND CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST NOTIFY ALL UTILITIES 48 HOURS PRIOR TO ANY EXCAVATION. UTILITY COORDINATION, POTHOLING/SURVEYING SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

11. THE LOCATION OF THE EXISTING FORCE MAINS ARE BASED ON RECORD DWGS, FORCE MAIN INSPECTIONS, AND UTILITY LOCATES, AND IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY THE LOCATION OF THE FORCE MAINS.

## PROJECT NOTES

1. ALL CONSTRUCTION METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD TECHNICAL SPECIFICATIONS AND ADDENDUM'S TO THE (STS) ON FILE IN THE OFFICE OF THE CITY ENGINEER, CITY OF TOPEKA, KANSAS. UNLESS OTHERWISE SUPPLEMENTED AND\OR MODIFIED BY THE CONTRACT DOCUMENTS.

2. THE CONTRACTOR SHALL DISPOSE OF ANY ROCK EXCAVATED FROM TRENCHES & STRUCTURES OFFSITE.

3. ALL DISTURBED AREAS SHALL BE FINISHED IN A CONDITION TO DRAIN WITH 4" (MIN.) TOPSOIL, SEEDED, FERTILIZED AND MULCHED.

4. ALL AREAS DISTURBED SHALL BE SEEDED, FERTILIZED AND MULCHED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

5. "EROSION FENCE" INCLUDES INSTALLATION. MAINTENANCE, AND REMOVAL OF THE FENCE FOR THE DURATION OF THE PROJECT. THE FENCE SHALL BE MONITORED AND EXCESS SEDIMENT REMOVED AS REQUIRED. EITHER HAY BALE FENCE OR APPROVED FABRIC SILT FENCE MAY BE USED AS "EROSION FENCE". HAY BALES ARE RECOMMENDED IN AREAS WHERE FLOWS ARE CONCENTRATED.

6. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED WASTE DISPOSAL SITES OR BORROW SITES AS APPROVED BY THE ENGINEER. THIS WORK IS CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR.

## MISCELLANEOUS ABBREVIATIONS

| | |
|---|---|
| BRNG | BEARING |
| CJ | CONTROL JOINT |
| CMU | CONCRETE MASONRY UNIT |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| COT | CITY OF TOPEKA |
| CTRL | CONTROL |
| CW | CIVIL WORKS |
| DIA | DIAMETER |
| DWG | DRAWING |
| E.F. | EACH FACE |
| ELEV | ELEVATION |
| EX | EXISTING |
| EXT | EXTERIOR |
| FL | FLOW LINE |
| FM | FORCE MAIN |
| FO | FIBER OPTIC |
| FTG | FOOTING |
| GA | GAUGE |
| GALV | GALVANIZED |
| HORIZ | HORIZONTAL |
| ISO | ISOMETRIC |
| JT | JOINT |
| LF | LINEAR FOOT |
| MH | MANHOLE |
| NC | NORMALLY CLOSED (VALVE) |
| NO | NORMALLY OPEN (VALVE) |
| NTS | NOT TO SCALE |
| O.C. | ON CENTER |
| OHE | OVERHEAD ELECTRIC |
| PFD | PROCESS FLOW DIAGRAM |
| PS | PUMP STATION |
| PVC | POLYVINYL CHLORIDE |
| P&ID | PROCESS & INSTRUMENTATION DIAGRAM |
| P&P | PLAN & PROFILE |
| SS, SAN | SANITARY SEWER |
| STA | STATION |
| ST | STREET |
| RED | REDUCER |
| REF | REFERENCE |
| REINF | REINFORCING |
| RNG | RENEWABLE NATURAL GAS |
| TP | TIE POINT |
| TYP | TYPICAL |
| UNO | UNLESS NOTED OTHERWISE |
| VERT | VERTICAL |
| WWF | WELDED WIRE FABRIC |

## CONTROL GEOMETRY

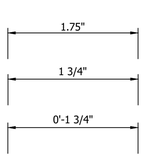
**PROJECT NAME: CENTRAL PARK PUMP STATION ODOR CONTROL IMPROVEMENTS**
TYPE OF SURVEY PROJECT: CONVENTIONAL GPS SURVEY
KANSAS STATE PLANE COORDINATES NAD 83
STATE PLANE ZONE: KANSAS NORTH 1501 GEOID: GEOID 18
ELEVATION DATUM: NGVD 29
SCALE FACTOR: 1.000000 FIELD / .999922497 USE FOR BOUNDARY

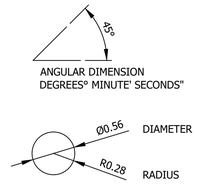
| DESCRIPTION | NORTHING (SP-SF/IF) | EASTING (SP-SF/IF) | ELEVATION |
|---|---|---|---|
| MF .1/2 IB W/CP CAP | 267223.74 | 1971474.323 | 935.027 |
| MS .1/2 IB W/CP CAP | 268991.718 | 1970938.284 | 936.625 |
| MS .1/2 IB W/CP CAP | 261403.35 | 1969202.101 | 902.021 |

**PROJECT NAME: ROCKFIRE NORTH PUMP STATION ODOR CONTROL IMPROVEMENTS**
TYPE OF SURVEY PROJECT: CONVENTIONAL GPS SURVEY
KANSAS STATE PLANE COORDINATES NAD 83
STATE PLANE ZONE: KANSAS NORTH 1501 GEOID: GEOID 18
ELEVATION DATUM: NGVD 29
SCALE FACTOR: 1.000000 FIELD / .99992350 USE FOR OFFICE

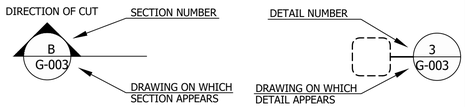
| DESCRIPTION | NORTHING (SP-SF/IF) | EASTING (SP-SF/IF) | ELEVATION |
|---|---|---|---|
| MF .SW COR SEC 21 | 246420.248 | 1979803.443 | 1055.91 |
| MS .1/2 IB | 249098.101 | 1979926.158 | 1036.68 |
| MF .NW COR SEC 21 | 251709.945 | 1979648.439 | 999.71 |
| MS .1/2 REBAR W/CP CAP | 248862.126 | 1987834.531 | 1021.248 |
| MS .1/2 REBAR W/CP CAP | 251972.645 | 1987345.883 | 996.965 |

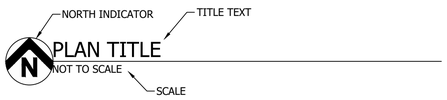
## DIMENSION REFERENCE SYSTEM




## PLAN, SECTION & DETAIL REFERENCE SYSTEM




NOTES:
1. DRAWING NUMBERS APPEARING IN DETAIL OR SECTION TITLES INDICATE THE DRAWING ON WHICH THE DETAIL OR SECTION IS CALLED OUT.
2. A DASH "-" IN PLACE OF A DRAWING NUMBER INDICATES THE DETAIL OR SECTION APPEARS ON THE SAME PAGE IN WHICH IT IS CALLED OUT.

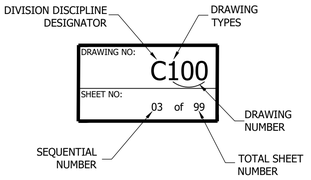


## UNITS, ORGANIZATION AND MISCELLANEOUS ABBREVIATIONS

| | |
|---|---|
| MG | MILLION GALLONS |
| HP | HORSEPOWER |
| USACE | UNITED STATES ARMY CORPS OF ENGINEERS |
| MGD | MILLION GALLONS PER DAY |
| mV | MILLIVOLTS |
| CFU | COLONY FORMING UNIT |
| 30 DAY MS2 REDUCTION | MALE-SPECIFIC-2 BACTERIOPHAGE |
| NPDES | NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM |
| ft | FEET |
| in | INCHES |
| mJ | MILLIJOULES |
| F | FAHRENHEIT |
| um | MICROMETER |
| cm | CENTIMETER |
| VFD | VARIABLE FREQUENCY DRIVE |

## REFERENCE TABLE

(1) FEEDER SCHEDULE NOTES DEFINED:
IDENTIFY GRAPHIC REPRESENTATIONS OF ELECTRICAL ITEMS AND DIRECTLY REFERENCE THEM TO SPECIFIC INFORMATION, SIZE, MAKE, MODEL, MATERIAL, SPECIFICATIONS, ETC.




## DIVISION DISCIPLINE

| | |
|---|---|
| GENERAL | G |
| DEMO | X |
| CIVIL | C |
| CIVIL WORKS | CW |
| STRUCTURAL | S |
| ARCHITECTURAL | A |
| PROCESS | D |
| PLUMBING | P |
| MECHANICAL | M |
| ELECTRICAL | E |
| INSTRUMENTATION | I |
| RESOURCE | R |
| MANUFACTURER DRAWINGS | MA |
| MECHANICAL/ ELECTRICAL | ME |
| STANDARD DRAWINGS & DETAILS | Z |

## DRAWING TYPES

| | |
|---|---|
| 0 | GENERAL, SYMBOL LEGEND ABBREVIATIONS, GENERAL NOTES |
| 1 | PLANS |
| 2 | ELEVATIONS |
| 3 | SECTIONS |
| 4 | LARGE SCALE DRAWINGS |
| 5 | DETAILS |
| 6 | SCHEDULES & DIAGRAMS |
| 7 | USER DEFINED |
| 8 | USER DEFINED |
| 9 | 3D DRAWINGS ISOMETRICS PHOTOS |

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|

Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
www.bartlettwest.com

# ODOR CONTROL IMPROVEMENTS GENERAL NOTES AND CONTROL GEOMETRY

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

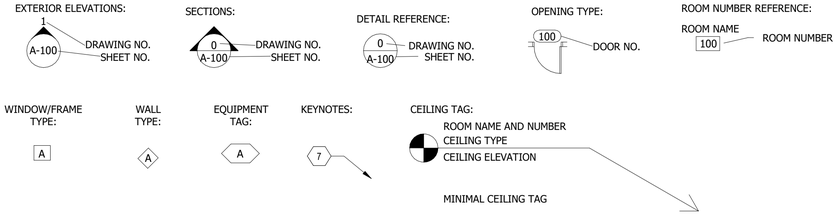
ETHAN PAUL MEYER LICENSED 29115 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | EPM |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | G-003 |
| SHEET NO: | 3 of 52 |



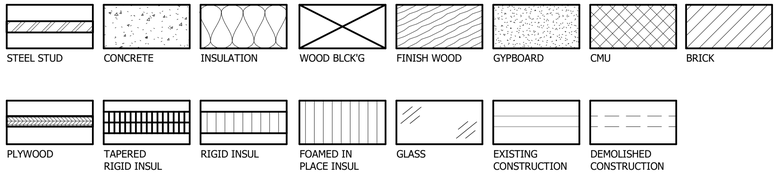
Last edit on: 12/8/2025 12:54 PM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_G_Cover.dwg Layout Name: GENERAL NOTES Plotted By: JRH01823 Plotted on: 12/8/2025 3:32:24 PM

## DRAWING SYMBOLS



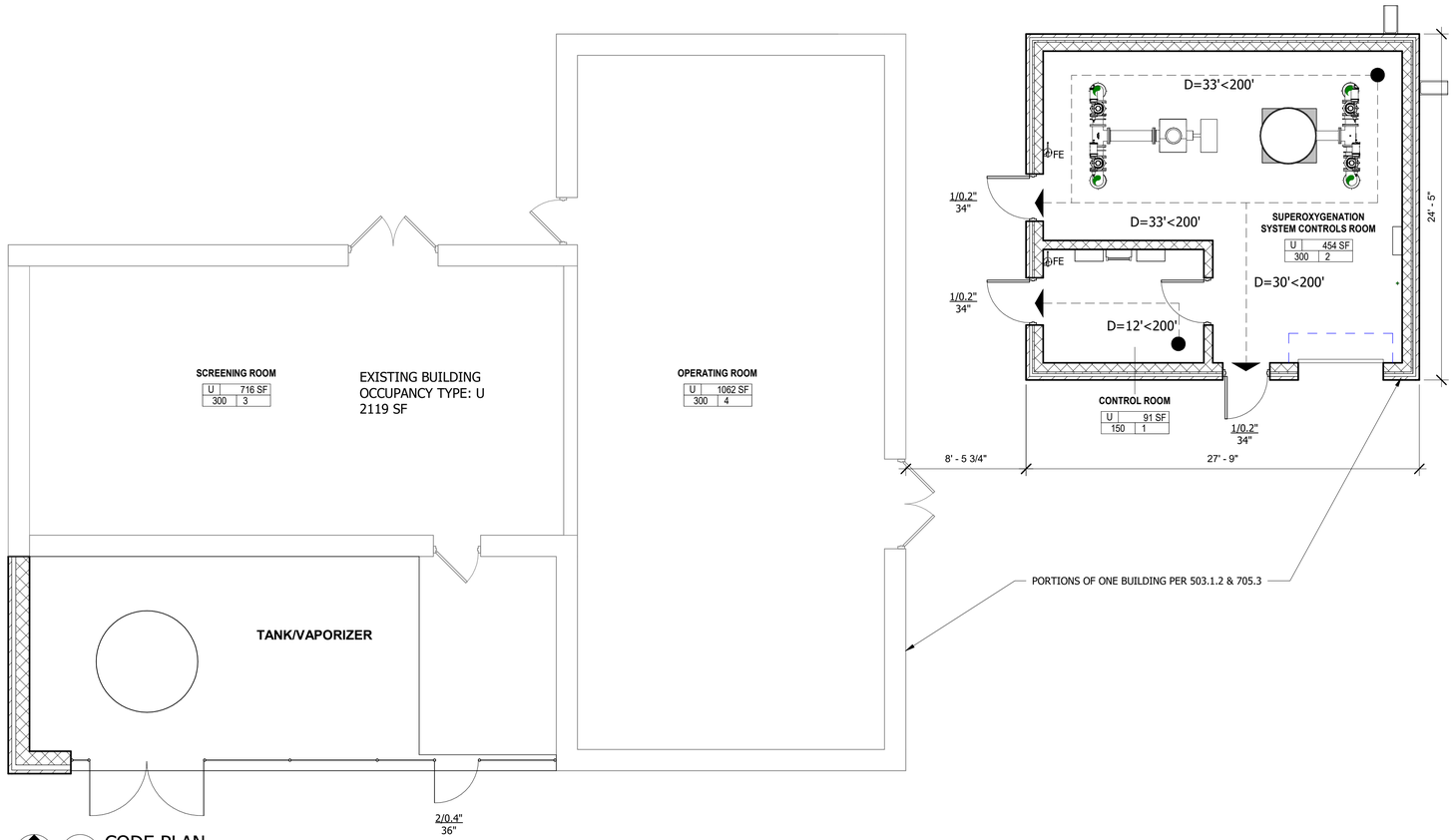

PLEASE NOTE THAT THE DIVISION OF LABOR IS ACCORDING TO THE SECTIONS IN THE PROJECT MANUAL AND NOT THE NOTATION SYSTEM ON THE DRAWINGS.

## MATERIAL INDEX




## ABBREVIATIONS

A/C = AIR CONDITIONER
AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE
ALUM = ALUMINUM
BOF = BOTTOM OF FOOTING
BOM = BILL OF MATERIAL
BOT = BOTTOM
BOW = BOTTOM OF WALL
BSMT = BASEMENT
CC = CENTER TO CENTER
CFM = CUBIC FEET PER MINUTE
CFS = CUBIC FEET PER SECOND
CI = CAST IRON
CL = CENTERLINE
CLG = CEILING
CJ = CONTROL JOINT
CMU = CONCRETE MASONRY UNIT
CONT = CONTINUOUS
CRES = CORROSION=RESISTANT STEEL
CSINK = COUNTERSINK
CU. FT. = CUBIC FEET
CU. YD. = CUBIC YARD
DIA = DIAMETER
DIM = DIMENSION
DN = DOWN
DWG = DRAWING
EA = EACH
ED = EDGE DISTANCE
EF = EXHAUST FAN
EQ = EQUAL
EW = EACH WAY
EXC = EXCAVATE
EXT = EXTERIOR
FACP = FIRE ALARM CONTROL PANEL
FCO = FLOOR CLEANOUT
FD = FLOOR DRAIN
FFL = FINISHED FLOOR LEVEL
FIN = FINISH
FL = FLOOR LEVEL
FRPF = FIREPROOF
FS = FAR SIDE
FTG = FITTING
G.T. = GLAZED TILE
GALV.= GALVANIZED
G.C. = GENERAL CONTRACTOR
GPM = GALLONS PER MINUTE
GYP. = GYPSUM
HDCP = HANDICAPPED
HVAC = HEATING, VENTILATION AND AIR CONDITIONING
HW = HOT WATER
ID = INNER DIAMETER
IN = INCH
INSUL. = INSULATION
INT = INTERIOR
INV = INVERT
J-BOX = JUNCTION BOX
JCT = JUNCTION
JST = JOIST
LN. FT = LINEAR FEET
LT = LIGHT
LTG = LIGHTING
MAS = MASONRY
MAX = MAXIMUM
MBW = MEASUREMENT BETWEEN WIRES
MFG = MANUFACTURING
MIN = MINIMUM
MTL = MATERIAL
NIC = NOT IN CONTRACT
NTS = NOT TO SCALE
OC = ON CENTER
OD = OUTSIDE DIAMETER
OPNG = OPENING OR ROUGH OPENING
OTS = OPEN TO STRUCTURE
PL = PROPERTY LINE
PLY = PLYWOOD
PSF = POUNDS PER SQUARE FOOT
PSI = POUNDS PER SQUARE INCH
PT = PAINT
QTY = QUANTITY
RC = REINFORCED CONCRETE
RD = ROOF DRAIN
RDL = ROOF DRAIN LEADER
REBAR = REINFORCING BAR
REINF = REINFORCED
REF = REFERENCE
REQD = REQUIRED
RM = ROOM
SAN = SANITARY
SD = SMOKE DETECTOR
SHT = SHEET
SHT'G = SHEATHING
SPECS = SPECIFICATIONS
SQ. FT. = SQUARE FEET
SQ. IN.: SQUARE INCHES
SS = STAINLESS STEEL
STD = STANDARD
STL = STEEL
TO = TOP OF
TOB = TOP OF BEAM
TOC = TOP OF CURB OR TOP OF CONCRETE
TOF = TOP OF FOOTING
TOJ = TOP OF JOIST
TOM = TOP OF MASONRY
TOW = TOP OF WALL
TYP = TYPICAL
VA = VOLTAGE
W/O = WITHOUT
WD = WOOD
WDW = WINDOW
WS = WEATHERSTRIPPING OR WATER STOP
WT = WEIGHT
WTR. HTR. = WATER HEATER




1 CODE PLAN
SCALE: 3/16" = 1'-0"

## CODE LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| 10 | EXIT - INTERIOR with occupant load. |
| | EXIT - EXTERIOR |
| | DOOR CLEARANCE |
| 55/16.5" / 36" | Occupants / Required Width / Provided Width |
| PROCESS 100 / F-2 | ROOM NAME Room Number / Occupancy, Area SF / Occupant Load Factor, Occupants |
| D=100' < R=250' | EXIT TRAVEL DIST. D= TRAVEL DISTANCE R= REQUIRED DISTANCE |
| | POINT OF COMMON PATH OF EGRESS. |
| FE | FIRE EXTINGUISHER 75' WALKING DISTANCE |
| | 1 HOUR RATED FIRE BARRIER (45 MIN RATED DOORWAYS) |
| | 2 HOUR RATED FIRE BARRIER (90 MIN RATED DOORWAYS) |

PRELIMINARY CODE ANALYSIS
PROJECT: TOPEKA ODOR CONTROL
ADDRESS: 2200 SW CENTRAL PARK AVE
JURISDICTION: CITY OF TOPEKA

CURRENT APPLICABLE CODES AS AMENDED
2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2015 UNIFORM MECHANICAL CODE
2023 NATIONAL ELECTRICAL CODE
2018 UNIFORM PLUMBING CODE
2021 INTERNATIONAL FIRE CODE
2015 LIFE SAFETY CODE
2010 ADA STANDARDS (LATEST EDITION)

IBC CH. 3: USE AND OCCUPANCY
OCCUPANCY TYPE:
NEW PORTION OF BUILDING: UTILITY GROUP U
EXISTING PORTION OF BUILDING: UTILITY GROUP U

IBC CH. 5: GENERAL BUILDING HEIGHTS AND AREAS
503.1.2 BUILDINGS ON SAME LOT
TWO OR MORE BUILDINGS ON THE SAME LOT SHALL BE CONSIDERED AS PORTIONS OF ONE BUILDING WHERE THE BUILDING HEIGHT, NUMBER OF STORIES OF EACH BUILDING AND THE AGGREGATE BUILDING AREA OF THE BUILDINGS ARE WITHIN THE LIMITATIONS SPECIFIED IN SECTION 504 AND 506.
ALLOWED HEIGHT: 55' W/O SPRINKLER
PROPOSED & EXISTING HEIGHT: 24'+-
ALLOWED STORIES: 2 W/O SPRINKLER
PROPOSED & EXISTING STORIES: 1
ALLOWED SF: 8,500 SF W/O SPRINKLER (U)
TOTAL SF: 678 SF (PROPOSED) + 2,119 SF (EXISTING)=2,797 SF

IBC CH. 6 CONSTRUCTION TYPE:
TYPE: IIB, NON-COMBUSTIBLE

IBC CH. 7 EXTERIOR WALL FIRE RESISTANCE RATING:
705.2 PROJECTIONS
EXCEPTION: BUILDINGS ON THE SAME LOT AND CONSIDERED AS PORTIONS OF ONE BUILDING IN ACCORDANCE WITH SECTION 705.3 ARE NOT REQUIRED TO COMPLY WITH THIS SECTION FOR PROJECTIONS BETWEEN THE BUILDINGS.
705.3 BUILDINGS ON THE SAME LOT
WHERE A NEW BUILDING IS TO BE ERECTED ON THE SAME LOT AS AN EXISTING BUILDING, THE LOCATION OF THE ASSUMED IMAGINARY LINE WITH RELATION TO THE EXISTING BUILDING SHALL BE SUCH THAT THE EXTERIOR WALL AND OPENING PROTECTION OF THE EXISTING BUILDING MEET THE CRITERIA AS SET FORTH IN SECTIONS 705.5 AND 705.8
EXCEPTIONS: 1. TWO OR MORE BUILDINGS ON THE SAME LOT SHALL BE EITHER REGULATED AS SEPARATE BUILDINGS OR SHALL BE CONSIDERED AS PORTIONS OF ONE BUILDING IF THE AGGREGATE AREA OF SUCH BUILDINGS IS WITHIN THE LIMITS SPECIFIED IN CH. 5 FOR A SINGLE BUILDING. WHERE THE BUILDINGS CONTAIN DIFFERENT OCCUPANCY GROUPS OR ARE OF DIFFERENT TYPES OF CONSTRUCTION, THE AREA SHALL BE THAT ALLOWED FOR THE MOST RESTRICTIVE OCCUPANCY OR CONSTRUCTION.
721.1(2) PRESCRIPTIVE FIRE RATING
CMU 3-1.3 LIMESTONE, CINDERS OR AIR-COOLED SLAG. MIN. FINISHED THICKNESS FACE-TO-FACE 4" FOR 2 HR

IBC CH. 9 FIRE PROTECTION
AUTOMATIC SPRINKLER IS NOT REQUIRED
FIRE EXTINGUISHERS: 1 PER 75' WALKING DISTANCE (NFPA)

CH. 10 MEANS OF EGRESS

| | SQFT | OCCUPANCY LOADCOUNT | OCCUPANCY |
|---|---|---|---|
| SUPEROXYGENATION | 454 SF | 300 | 2 |
| SYSTEM CONTROLS ROOM: CONTROL ROOM: | 91 SF | 150 | 1 |
| TOTAL OCCUPANCY | | | 3 |

EGRESS WIDTH (1005)
3* .20 = 0.6"
PROVIDED = 64"

MEANS OF EGRESS (1006.2.1)
MIN. NUMBER OF EXITS = 2
ACTUAL PROVIDED = 2
COMMON PATH OF TRAVEL: N/A ACTUAL, 100' MAX

TRAVEL DISTANCE (1017.2)
MAX. EXIT ACCESS TRAVEL DISTANCE W/O SPRINKLER: 30' ACTUAL, 200' MAX.

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|

Bartlett&West
1200 SW EXECUTIVE DR. - TOPEKA, KS 66615
PHONE 785-272252 - FAX
www.bartlettwest.com

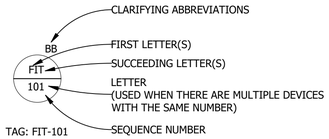
# ODOR CONTROL IMPROVEMENTS
# CENTRAL PARK PUMP STATION
# CODE PLAN & ABBREVIATIONS

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

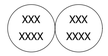
BETH ANNE VALDIVIA LICENSED 04/16/2026 7369 KANSAS ARCHITECT

| | |
|---|---|
| DESIGNED BY: | JD |
| DRAWN BY: | JD |
| APPROVED BY: | BV |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | --- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | G-004 |
| SHEET NO: | 4 of 52 |

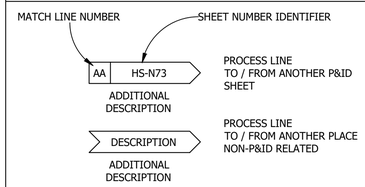
## EXAMPLE SYMBOLS




## INSTRUMENT SHARING COMMON HOUSING



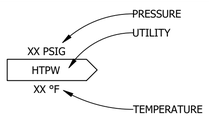

## CONTINUATION ARROW DESIGNATIONS




## UTILITY DESIGNATIONS

UTILITY

CA: COMPRESSED AIR
CD: CONDENSATE
CW: CITY WATER
HTPW: HOT PROCESS WATER
IA: INSTRUMENT AIR
PW: PROCESS WATER
ST: STEAM

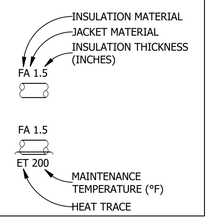



## INSULATION DESIGNATIONS

INSULATION MATERIAL
F: PREFORMED MINERAL FIBERGLASS
M: MINERAL WOOL
C: CALCIUM SILICATE
N: CLOSED CELL ELASTOMERIC
P: POLYISOCYANURATE
G: RIGID CELLULAR GLASS (FOAM GLASS)
R: FLEX RUBBER

JACKET MATERIAL
A: ALUMINUM
S: STAINLESS STELL
O: PVC OUTDOOR FINISH
V: PVC INDOOR FINISH

HEAT TRACE
ET: ELECTRIC
ST: STEAM



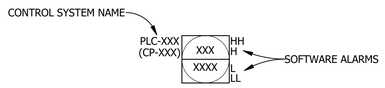

## INSTRUMENTATION LETTER IDENTIFICATION

| | FIRST LETTER | | SUCCEEDING LETTERS | | |
|---|---|---|---|---|---|
| | MEASURED OR INITIATING VARIABLE | MODIFIER | READOUT OR PASSIVE FUNCTION | OUTPUT FUNCTION | MODIFIER |
| A | ANALYSIS | | ALARM | | |
| B | BURNER FLAME | | USER'S CHOICE | USER'S CHOICE | USER'S CHOICE |
| C | CONDUCTIVITY (ELECTRICAL) | CORROSION | | CONTROL | CLOSED |
| D | DENSITY (MASS) OR SPECIFIC GRAVITY | DIFFERENTIAL | | | |
| E | VOLTAGE | EMERGENCY | PRIMARY ELEMENT | | |
| F | FLOW RATE | RATIO (FRACTION) | FREQUENCY | | |
| G | GAUGING (DIMENSIONAL) | | GLASS GAUGE | | |
| H | HAND (MANUALLY INITIATED) | | | | HIGH |
| I | CURRENT (ELECTRICAL) | | INDICATE | | |
| J | POWER | SCAN | | | TORQUE |
| K | TIME OR TIME SCHEDULE | | | CONTROL STATION | |
| L | LEVEL | | LIGHT (PILOT) | | LOW |
| M | MOISTURE OR HUMIDITY OR MOTOR | | | | MIDDLE OR INTERMEDIATE |
| N | UNCLASSIFIED | | | | |
| O | USER'S CHOICE | OPERATION | ORIFICE (RESTRICTION) | | OPEN |
| P | PRESSURE OR VACUUM | | POINT (TEST CONNECTION) | | |
| Q | QUANTITY OR EVENT | INTEGRATE OR TOTALIZE | TOTALIZE | | |
| R | REMOTE | RESTRICTION | RECORD OR PRINT | RELIEF | |
| S | SPEED OR FREQUENCY | SAFETY | SWITCH | | STOP |
| T | TEMPERATURE | | | TRANSMIT | |
| U | MULTIVARIABLE | | MULTIFUNCTION | MULTIFUNCTION | MULTIFUNCTION |
| V | VIBRATION | | | VALVE, DAMPER OR LOUVER | VACUUM |
| W | WEIGHT OR FORCE | | WELL | | |
| X | SHUTDOWN / UNCLASSIFIED | | ACCESSORY DEVICES | UNCLASSIFIED | UNCLASSIFIED |
| Y | EVENT | | | RELAY OR COMPUTE | |
| Z | POSITION | | | DRIVE, ACTUATE, OR UNCLASSIFIED FINAL CONTROL ELEMENT | |

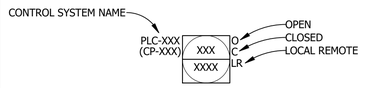
## INSTRUMENTATION DEVICE AND FUNCTION SYMBOLS - ISA (2005)

| NO. | SHARED DISPLAY, SHARED CONTROL (1) | | C | D | LOCATION & ACCESSIBILITY |
|---|---|---|---|---|---|
| | A | B | | | |
| | PRIMARY CHOICE OR BASIC PROCESS CONTROL SYSTEM | ALTERNATE CHOICE OR SAFETY INSTRUMENTED SYSTEM | COMPUTER SYSTEMS AND SOFTWARE | DISCRETE | |
| 1. | | | | | • LOCATED IN FIELD.<br>• NOT PANEL, CABINET, OR CONSOLE MOUNTED.<br>• VISIBLE AT FIELD LOCATION.<br>• NORMALLY OPERATOR ACCESSIBLE. |
| 2. | | | | | • LOCATED IN OR ON FRONT OF CENTRAL OR MAIN PANEL OR CONSOLE.<br>• VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY.<br>• NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE. |
| 3. | | | | | • LOCATED IN REAR OF CENTRAL OR MAIN PANEL.<br>• LOCATED IN CABINET BEHIND PANEL.<br>• NOT VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY.<br>• NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE. |
| 4. | | | | | • LOCATED IN OR ON FRONT OF SECONDARY OR LOCAL PANEL OR CONSOLE.<br>• VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY.<br>• NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE. |
| | | | | | • LOCATED IN REAR OF SECONDARY OR LOCAL PANEL.<br>• LOCATED IN FIELD PANEL.<br>• NOT VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY.<br>• NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE. |

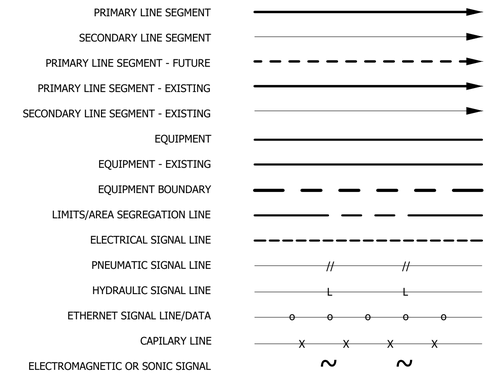
## CONTROL BLOCK TERMINOLOGY




## ACTUATOR BLOCK TERMINOLOGY




## LINE TYPE SYMBOLS




## HAND SWITCH DESIGNATIONS

| | |
|---|---|
| DUR | DURATION |
| ESTOP | EMERGENCY STOP |
| FOR | FORWARD-OFF-REVERSE |
| FR | FORWARD-REVERSE |
| FREQ | FREQUENCY |
| HOA | HAND-OFF-AUTO |
| HORA | HAND-OFF/RESET-AUTO |
| LR | LOCAL REMOTE |
| LOR | LOCAL-OFF-REMOTE |
| OC | OPEN-CLOSE |
| OCA | OPEN-CLOSE-AUTO |
| OCR | OPEN-CLOSE-REMOTE |
| OD | ON-OFF |
| OOA | ON-OFF-AUTO |
| OOR | ON-OFF-REMOTE |
| OSC | OPEN-STOP-CLOSE |
| POT | POTENTIOMETER |
| RST | RESET |
| SS | START-STOP |
| WDA | WET-DRY-REVERSE |

## INSTRUMENT FUNCTION DESIGNATIONS

| | |
|---|---|
| *K* | GAIN OR ATTENUATE (INPUT/OUTPUT) |
| *-K* | GAIN AND REVERSE |
| Σ | ADD OR SUM (ADD / SUBTRACT) |
| Δ | SUBTRACT (DIFFERENCE) |
| √ | EXTRACT SQUARE ROOT |
| / | DIVIDE |
| *F(X)* | CHARACTERIZE |
| > | HIGH SELECT |
| < | LOW SELECT |
| X | MULTIPLE |
| ∫ | INTEGRATE (TIME INTERVAL) |
| $CH_4$ | METHANE |
| $CL_2$ | CHLORINE RESIDUAL |
| $CO_2$ | CARBON DIOXIDE |
| DO | DISSOLVED OXYGEN |
| LEL | LOWER EXPLOSIVE LIMIT |
| MCC | MOTOR CONTROL CENTER |
| MLSS | MIXED LIQUOR SUSPENDED SOLIDS |
| $NH_3$ | AMMONIA |
| $NO_3$ | NITRATE |
| $O_2$ | OXYGEN (PURITY) |
| pH | pH CELL |
| p | ORTHOPHOSPHATE |
| TSS | TOTAL SUSPENDED SOLIDS |
| TURB | TURBIDITY |
| UVI | UV INTENSITY |
| UVT | UV TRANSMITTANCE |
| STBY | STANDBY |
| FWD | FORWARD |
| REV | REVERSE |
| BLWDN | BLOWDOWN |

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|

Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
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# ODOR CONTROL IMPROVEMENTS
# PROCESS AND INSTRUMENTATION DIAGRAM LEGEND

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS


| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | ---- |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | N-001 |
| SHEET NO: | 5 of 52 |



Last edit on: 6/26/2025 11:24 AM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_P&ID.dwg Layout Name: N-001 Plotted By: JRH01823 Plotted on: 12/8/2025 3:35:17 PM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

## VALVE SYMBOLS

- GV - GATE VALVE
- BURIED GATE VALVE
- KNV - KNIFE GATE VALVE
- BFV - BUTTERFLY VALVE
- BURIED BUTTERFLY VALVE
- BLV - BALL VALVE
- BURIED BALL VALVE
- VBLV - VEE BALL VALVE
- PV - PLUG VALVE
- BURIED PLUG VALVE
- DV - DIAPHRAGM VALVE
- CV - CHECK VALVE
- CV - CHECK VALVE - SPRING LOADED SWING
- CV - CHECK VALVE - SWING
- BCV - BALL CHECK VALVE
- FLCV - FLAPPER CHECK VALVE
- TDV - TRIPLE DUTY VALVE
- FCV - FLOW CONTROL VALVE
- GLV - GLOBE VALVE
- PIV - PINCH VALVE
- NV - NEEDLE VALVE
- RV - ROTARY VALVE
- PRV - PRESSURE REDUCING VALVE: IN-LINE GENERIC
- AVV - AIR/VACUUM VALVE
- ARV - AIR RELEASE VALVE
- PSV - PRESSURE RELIEF(SAFETY) VALVE
- VRV - VACUUM RELIEF VALVE
- BBV - BLOCK AND BLEED VALVE
- GENERIC VALVE
- ANGLE VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- REGULATING CONTROL VALVE
- PRESSURE CONTROL VALVE
- INTEGRATED PRESSURE CONTROL VALVE (CLA-VAL)
- PRESSURE REDUCING REGULATOR INTERNAL PRESSURE TAP
- BACK PRESSURE REGULATOR INTERNAL PRESSURE TAP
- BACK PRESSURE REGULATING EXTERNAL PRESSURE TAP
- PRESSURE REDUCING EXTERNAL PRESSURE TAP
- BFP - BACK FLOW PREVENTER

## MEASUREMENT/PRIMARY ELEMENTS

- SINGLE ELEMENT SENSING PROBE
- DUAL ELEMENT SENSING PROBE
- FIBEROPTIC SENSING PROBE
- UTRAVIOLET FLAME DETECTOR
- FLAME ROD FLAME DETECTOR
- GENERIC ORIFICE PLATE
- ORIFICE PLATE IN QUICK-CHANGE FITTING
- CONCENTRIC CIRCLE ORIFICE PLATE
- ECCENTRIC CIRCLE ORIFICE PLATE
- CIRCLE QUADRANT ORIFICE PLATE
- MULTI-HOLE CIRCLE ORIFICE PLATE
- GENERIC VENTURI TUBE, FLOW NOZZLE, OR FLOW TUBE
- VENTURI TUBE
- FLOW NOZZLE
- FLOW TUBE
- INTEGRAL ORIFICE PLATE
- STANDARD PILOT TUBE
- AVERAGING PILOT TUBE
- TURBINE OR PROPELLER FLOWMETER
- VORTEX SHEDDING FLOWMETER
- TARGET FLOWMETER
- MAGNETIC FLOWMETER
- THERMAL MASS FLOWMETER
- POSITIVE DISPLACEMENT FLOWMETER
- CONE METER
- WEDGE METER
- CORIOLLIS FLOWMETER
- ULTRASONIC FLOWMETER
- VARIABLE AREA FLOWMETER
- OPEN CHANNEL WEIR PLATE
- OPEN CHANNEL FLUME/V-CONE
- DISPLACER INTERNALLY MOUNTED VESSEL
- BALL FLOAT INTERNALLY MOUNTED VESSEL
- RADIATION, SINGLE POINT
- RADIATION, MULTI-POINT OR CONTINUOUS
- DIP TUBE OR OTHER PRIMARY ELEMENT AND STILLING WELL
- FLOAT WITH GUIDE WIRES
- INSERT PROBE
- RADAR
- STRAIN GAGE OR OTHER ELECTRONIC TYPE SENSOR
- FLAME ARRESTOR
- GENERIC ELEMENT WITHOUT THERMOWELL
- ROTAMETER
- PADDLE WHEEL METER
- BATCH

NOTE:
FOR SYMBOLS NOT FOUND ON P&ID LEGEND SHEET REFER TO ANSI/ISA 5.1-2009.

## PUMP SYMBOLS

- P - GENERIC PUMP SYMBOL
- CFP - CENTRIFUGAL PUMP
- CHP - CHOPPER SCUM PUMP
- CFP - CHEMICAL FEED METERING PUMP
- PMP - PERISTALTIC METERING PUMP
- CIP - CENTRIFIUGAL INLINE PUMP
- MCP - MULTI-STAGE CENTRIFUGAL PUMP
- SP - SUBMERSIBLE PUMP
- SMP - SUBMERSIBLE WELL PUMP
- VTP - VERTICAL TURBINE PUMP
- GP - GEAR PUMP
- CFP - CHEMICAL FEED DIAPHRAGM PUMP
- PP - PISTON PUMP
- EJR - EJECTOR
- ADP - AIR OPERATED DIAPHRAGM PUMP
- PCP - PROGRESSIVE CAVITY PUMP
- SP - SCREW PUMP
- VTP - VERTICAL CAN PUMP
- RLP - ROTARY LOBE PUMP
- SP - SUBMERSIBLE PEDESTAL PUMP

## HEAT EXCHANGERS

- SHELL AND TUBE HEAT EXCHANGER
- SPIRAL EXCHANGER
- PLATE AND FRAME EXCHANGER
- DOUBLE PIPE EXCHANGER
- AIR COOLED EXCHANGER
- SHELL & TUBE HEAT EXCHANGER
- GENERIC HEAT EXCHANGER

## MIXERS

- MIXER, TOP VIEW
- MIXER, SIDE VIEW
- MIXING TEE
- MECHANICAL SURFACE AERATOR

## BLOWERS/COMPRESSORS

- F - FAN
- RLB - ROTARY LOBE BLOWER
- MSB - MULTI-STAGE CENTRIFUGAL BLOWER
- BL - BLOWER
- RCP - RECIPROCATING COMPRESSOR
- LRC - LIQUID RING COMPRESSOR
- RCP - RECIPROCATING COMPRESSOR WITH RECEIVER
- SRC - SCREW COMPRESSOR

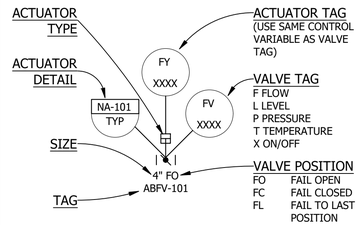
## GATE SYMBOLS

- SLUICE GATE
- BUTTERFLY GATE
- SLIDE GATE
- FLAP GATE
- STOP GATE

## ACTUATOR SYMBOLS

- PNEUMATIC DIAPHRAGM SPRING-OPPOSED, SINGLE OR DOUBLE ACTING
- PNEUMATIC CYLINDER, SINGLE OR DOUBLE ACTING ACTUATED BY ONE INPUT
- ELECTRIC MOTOR
- SOLENOID
- HYDRAULIC
- DIAPHRAGM, DIFFERENTIAL PRESSURE
- MANUAL/HAND
- PNEUMATIC VALVE CONTROLLER
- AIR OVER OIL ACTUATOR

EXAMPLE
AUTOMATED VALVE TAGGING




| CONNECTION VALVE TYPES | |
|---|---|
| CONNECTION TYPE INDICATES TYPICAL VALVES FOR ALL TYPES | |
| THREADED x THREADED | SOCKET x SOCKET |
| FLANGE x FLANGE | FLANGE x WELD |

| VALVE DESIGNATIONS | |
|---|---|
| NO | NORMALLY OPEN |
| NC | NORMALLY CLOSED |
| LO | LOCKED OPEN |
| LC | LOCKED CLOSED |

VALVE TAG EXAMPLES

4" BLV-101 OR 4" LO BLV-101

4" ABFV-101 OR 4" NO ABFV-101

## MEASUREMENT/SECONDARY ELEMENTS

- SIGHT GLASS
- GAGE INTEGRALLY MOUNTED ON VESSEL
- GAGE GLASS EXTERNALLY MOUNTED ON VESSEL
- PRESSURE GAUGE
- THERMOMETER

## LEVEL SYMBOLS

- LEVEL (BUBBLER TUBE)
- FLOAT
- INVERTED COLUMN
- RADAR
- SUSPENDED/SUBMERSIBLE
- ULTRASONIC

# ODOR CONTROL IMPROVEMENTS SYMBOLS 1 OF 2

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|


Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
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| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | ---- |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | N-002 |
| SHEET NO: | 6 of 52 |




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BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

## TANK SYMBOLS

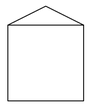
STORAGE TANK

NOZZLES
DOUBLE LINE NOZZLES
SINGLE LINE NOZZLES
FLANGED NOZZLES

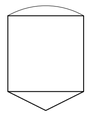
FLAT BOTTOM DOMED TOP

FLAT BOTTOM DOMED TOP - DUAL WALL

FLAT BOTTOM OPEN TOP

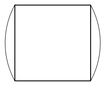


FLAT BOTTOM CONED TOP



CONED BOTTOM DOMED TOP

INTERNAL FLOATING ROOF TANK



HORIZONTAL TANK

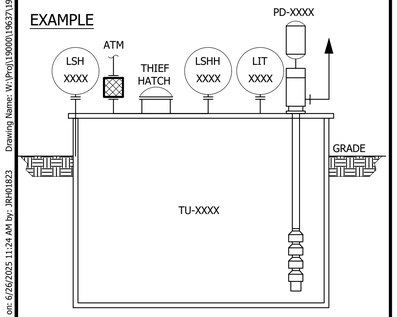
CHEMICAL TOTE

PSV & PRESSURE - VACUUM THIEF HATCH

MANWAY HATCH

THIEF HATCH

EXAMPLE




BELOW GRADE DOUBLE WALL SUMP TANK

## FILTER/STRAINER SYMBOLS

FILTER

WATER SEPARATOR

CONDENSATE AND SEDIMENT TRAP

AUTOMATIC DRIP TRAP

Y-STRAINER W/ BLOW-OFF VALVE

SEPARATOR

ROTARY SEPARATOR

VACUUM FILTER

BASKET STRAINER - FLANGED

Y-STRAINER

SUPLEX STRAINER


DRIER

COALESCING FILTER

SILENCER

STRAINER/PRESSURE REDUCTION VALVE

## PIPE & FITTING SYMBOLS



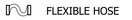
UNION

THREADED PLUG

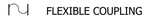
QUICK DISCONNECT



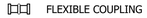
GAP IN THE LINE



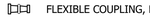
FLEXIBLE HOSE



FLEXIBLE COUPLING



FLEXIBLE COUPLING



FLEXIBLE COUPLING, REDUCER



WELDED JOINT

GROOVED END JOINT



FLANGED JOINT

BLIND FLANGE

MECHANICAL JOINT

BELL & SPIGOT JOINT



FLANGE x HUG ADAPTER



FLANGED COUPLING ADAPTER



GROOVED END ADAPTER FLANGE



FLEXIBLE COUPLING



FLEXIBLE COUPLING W/ TIE RODS



THREADED FITTINGS



CONCENTRIC REDUCER



ECCENTRIC REDUCER



SPECTACLE BLIND CLOSE



SPECTACLE BLIND OPEN




INSULATING FLANGE



BLEED RING



CONE STRAINER



SPECIFICATION BREAK

## COMMUNICATION SYMBOLS



ALARM HORN




HMI SCREEN




ALARM LIGHT
X= LENS COLOR
R = RED
G = GREEN
W = WHITE
A - AMBER




PILOT LIGHT
X= LENS COLOR
R = RED
G = GREEN
W = WHITE
A - AMBER

## ANNOTATION SYMBOLS




INSTRUMENTATION DETAIL CALLOUT




PIPELINE IDENTIFICATION




TIE POINT CALLOUT




PIPE TRANSITION ABOVE/BELOW GROUND

## ASSEMBLY SYMBOLS

PURGE VALVE




PURGE VALVE ASSEMBLY




PRESSURE GAUGE / TRANSMITTER ASSEMBLY

## MISC SYMBOLS



CONVEYOR BELT



FLARE CANDLESTICK



FLARE ENCLOSED



RECEIVER / LAUNCHER



PCC LOAD LINE CONTAINMENT BIN



MEM - MEMBRANE CARTRIDGE



XX CYL - XX GAS CYLINDER (XX= GAS TYPE, H2,O2,CO2)



EC - ELECTRICAL COOLER



DS - DISCONNECT SWITCH




CDT - CONDENSATE DRIP TRAP



RDP RUPTURE DISC (PRESSURE)



RDV - RUPTURE DISC (VACUUM)



VENT TO ATMOSPHERE



AIR GAP/DRAIN



DRAIN



ANNULAR DIAPHRAGM SEAL



DIFFUSER



AF - AIR FILTER



EM - ELECTRIC MOTOR



EXC - EXPANSION CHAMBER



PUD - PULSATION DAMPENER



AS - AIR SEPARATOR



PF - POT FEEDER



GR - GRINDER



CALIBRATION COLUMN



REMOVABLE QUILL ASSEMBLY



OPEN CHANNEL DIFFUSER



VACUUM BREAKER

## VEHICLE SYMBOLS



TRUCK CNG



TRUCK OIL



TRAILER CNG



RAIL CAR OIL



RAIL CAR HOPPER

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|


Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
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www.bartlettwest.com


# ODOR CONTROL IMPROVEMENTS SYMBOLS 2 OF 2

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS




| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | ---- |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | N-003 |
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# PIPE SYSTEM CODES

| ABBREV | PROCESS SYSTEM |
|---|---|
| **-A-** | |
| A | AMBIENT AIR or AIR |
| AA | AERATION AIR |
| ABSC | AIR SCRUB |
| ABW | AIR BACKWASH |
| ALS | ALUMINUM SULFATE SOLUTION(ALUM) |
| AMS | AMMONIA SOLUTION |
| AMG | AMMONIA GAS |
| AML | AERATION MIXED LIQUOR |
| ANS | ANTI-SCALANT SOLUTION |
| APS | ANIONIC POLYMER SOLUTION |
| ARAS | ANAEROBIC RETURN ACTIVATED SLUDGE |
| AV | AIR VENT |
| **-B-** | |
| BFD | BACK FLUSH OUTLET |
| BFS | BACK FLUSH SUPPLY |
| BG | BIOGAS |
| BLW | BLENDED WATER |
| BO | BLEACHED OIL |
| BW | BACKWASH |
| BWR | BACKWASH RECYCLE |
| BWS | BACKWASH SUPPLY |
| BWW | BACKWASH-TO-WASTE |
| BPS | BY-PASS |
| **-C-** | |
| C | CENTRATE |
| CPA | COMPRESSED AIR |
| CAS | CITRIC ACID SOLUTION |
| CAU | CAUSTIC SODA SOLUTION |
| CBNS | CARBON SLURRY |
| CC | CLOSED COOLING WATER |
| CD | CONDENSATE or CONDENSATE DRAIN |
| CDG | CARBON DIOXIDE GAS |
| CDS | CARBON DIOXIDE SOLUTION |
| CDW | COLD WATER |
| CF | CHEMICAL FEED or CONCENTRATE FEED |
| CFW | CHEMICAL FEED WATER |
| CGS | COAGULANT SOLUTION |
| CGV | CHLORINE GAS VACUUM |
| CHR | CHLORINE RESIDUAL |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| CL | CHLORINE |
| CLG | CHLORINE GAS |
| CLO2S | CHLORINE DIOXIDE SOLUTION |
| CLRTS | CLEARITAS |
| CLS | CHORINE SOLUTION |
| CO | CARBON MONOXIDE |
| CO2 | CARBON DIOXIDE |
| CON | CONCENTRATE |
| CPS | CATIONIC POLYMER SOLUTION |
| CR | CONDENSATE RETURN |
| CRH | COLD REHEAT |
| CS | CAUSTIC SODA |
| CSE | CHLORINATED SECONDARY EFFLUENT |
| CSS | CAUSTIC SODA SOLUTION |
| CS-FW | CAUSTIC SODA TO FINISHED WATER |
| CS-NEUT | CAUSTIC SODA TO NEUTRALIZATION |
| CS-ROCIP | CAUSTIC SODA TO RO CIP SYSTEM |
| CW | CITY WATER or COLD WATER |
| **-D-** | |
| DCSS | DILUTED CAUSTIC SOLUTION |
| DCT | DECANT |
| DE | DEWATERED CAKE |
| DF | DEFOAMER |
| DG | DIGESTER GAS |
| DGH | DIGESTER GAS HIGH |
| DGR | DEGRITTED RETURN |
| DIW | DEIONIZED WATER |
| DIS | DISCHARGE TO LAKE |
| DIS-CONC | CONCENTRATE DISCHARGE TO LAKE |
| DIS-SL | DISCHARGE TO SLUDGE PONDS |
| DMW | DOMESTIC WATER |
| DR | DRAIN |
| DRS | DECHLORINATION SOLUTION |
| DS | DIGESTED SLUDGE |
| DSR | DIGESTED SLUDGE RECYCLE |
| DSS | DIGESTED SLUDGE SUPERNATANT |
| DW | DOMESTIC WATER |
| DWPD | DEWATERING PUMP DISCHARGE |
| DWS | DEWATERED SLUDGE |
| **-E-** | |
| ED | EQUIPMENT DRAIN |
| EFF | EFFLUENT |
| EJW | ENGINE JACKET WATER |
| ERP | EFFLUENT RETURN PRIMARY |
| EW | EVAPORATOR WATER |
| EXH | ENGINE or BOILER EXHAUST |
| EXH-PF | PIPE FILTER EXHAUST |
| **-F-** | |
| FA | FATTY ACID or FOUL AIR |
| FAD | FOUL AIR DUCT |
| FAP | FOUL AIR PIPE |
| FC | FERRIC CHLORIDE |
| FCS | FERRIC CHLORIDE SOLUTION |
| FCSF | FERRIC SULFATE |
| FE | FINAL EFFLUENT |
| FED | FEED |
| FI | FILTER INFLUENT |
| FIL | FILL LINE |
| FIRE | FIRE LINE |
| FIRW | FIRE WATER |

| ABBREV | PROCESS SYSTEM |
|---|---|
| **-F CONT-** | |
| FL | FLUORIDE |
| FLS | FLUORIDE SOLUTION |
| FL-FW | FLUORIDE TO FINISHED WATER |
| FLT | FILTRATE |
| FM | FORCE MAIN |
| FO | FUEL OIL |
| FOR | FUEL OIL RETURN |
| FOS | FUEL OIL SUPPLY |
| FTW | FILTERED WATER |
| FW | FINISHED WATER or FEED WATER |
| FW/BW | FILTERED WATER / BACKWASH |
| FWW | FILTERED WATER-TO-WASTE |
| **-G-** | |
| G | GRIT |
| GL | GLYCOL |
| GY | GLYCERINE |
| **-H-** | |
| HA | HYDROCHLORIC ACID |
| HCL-NEUT | HYDROCHLORIC ACID TO NEUTRALIZATION |
| HCL-ROCIP | HYDROCHLORIC ACID TO RO CIP SYSTEM |
| HCL-UFCIP | HYDROCHLORIC ACID TO UF CIP SYSTEM |
| HDW | HOT WATER |
| HPA | HIGH PRESSURE AIR |
| HPC | HIGH PRESSURE CONDENSATE |
| HPS | HIGH PRESSURE STEAM (175#) |
| HPW | HIGH PRESSURE WATER |
| HRH | HOT RETREAT |
| HRR | HEAT RECOVERY RETURN |
| HRS | HEAT RECOVERY SUPPLY |
| HSV | HIGH SERVICE |
| HSW | HIGH STRENGTH WASTE |
| HTPW | HOT PROCESS WATER |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| **-I-** | |
| IA | INSTRUMENT AIR |
| INF | INFLUENT |
| IPC | INTERMEDIATE PRESSURE CONDENSATE |
| IPD | INFLUENT PUMP DISCHARGE |
| IPR | INFLUENT PUMP RECYCLE |
| IPS | INTERMEDIATE PRESSURE STEAM (60#) |
| ISB | INFLUENT SEWER BYPASS |
| **-J-** | |
| JWR | JACKET WATER RETURN |
| JWS | JACKET WATER SUPPLY |
| **-L-** | |
| LIM | LIME |
| LPC | LOW PRESSURE CONDENSATE |
| LPG | LIQUEFIED PETROLEUM GAS |
| LPS | LOW PRESSURE STEAM (30#) |
| LSLG | LIME SLUDGE |
| **-M-** | |
| MA | METHANOL |
| ME | METHYL ESTER (BODIES) |
| MET | METHANE |
| ML | MIXED LIQUOR |
| MM | METHYL-MERCAPTAN (ODORANT) |
| MPC | MEDIUM PRESSURE CONDENSATE |
| MPS | MEDIUM PRESSURE STEAM (150#) |
| MS | DIGESTER MIXING SLUDGE |
| MUW | MAKE-UP WATER |
| **-N-** | |
| N2 | NITROGEN |
| NE | NITRIFICATION EFFLUENT |
| NEUT-CIRC | NEUTRALIZATION CIRCULATION |
| NEUT-W | NEUTRALIZATION WASTE |
| NG | NATURAL GAS |
| **-O-** | |
| O2 | OXYGEN |
| OVF | OVERFLOW |
| OZA | OZONE MAKE-UP AIR |
| OZG | OZONE GAS |
| OZS | OZONE SOLUTION |
| OZW | OZONE INJECTOR WATER |
| **-P-** | |
| P | PROCESS |
| PA | PLANT AIR |
| PAA | POST AERATION AIR |
| PAC | POWDERED ACTIVATED CARBON SOLUTION |
| PAS | PHOSPHORIC ACID SOLUTION |
| PBP | PLANT BYPASS |
| PD | PROCESS DRAIN |
| PEF | PRIMARY EFFLUENT |
| PEW | PLANT EFFLUENT WATER |
| PHW | PLANT HOT WATER |
| PI | PRIMARY INFLUENT |
| PLS | POLYMER SOLUTION |

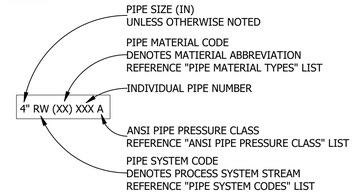
| ABBREV | PROCESS SYSTEM |
|---|---|
| **-P CONT-** | |
| PLW | PLANT WATER |
| PMW | PROCESS MAKE-UP WATER |
| PAO | POLYPHOSPHATE |
| POL | POLYMER |
| POS | PERMANGANATE SOLUTION |
| PP | PROPANE or PHOSPHORUS PRECIPITATE |
| PRF | PRESSURE RELIEF |
| PRM | PERMEATE |
| PRC | PLANT RECYCLE |
| PRS | PHOSPHORUS-RICH SUPERNATANT |
| PS | PRIMARY SLUDGE |
| PSC | PRIMARY SLUDGE |
| PW | POTABLE WATER (CITY WATER) |
| **-R-** | |
| R | RECIRCULATION |
| RAS | RETURN ACTIVATED SLUDGE |
| RAW | RAW WATER |
| REW | RECLAIMED WATER |
| RF | REFRIGERANT |
| RL | REFRIGERANT LIQUID |
| RO-CIPC | RO CIP CONCENTRATE CIP OUTLET TO RO CIP TANK |
| RO-CIPD | RO CIP DRAIN |
| RO-CIPF | RO CIP FEED |
| RO-CIPN | RO CIP TO NEUTRALIZATION |
| RO-CIPP | RO PERMEATE CIP OUTLET TO RO CIP TANK |
| RO-CIPTF | RO CIP TANK FILL |
| RO-CIRC | RO CIP CIRCULATION |
| RO-CONC | RO CONCENTRATE |
| RO-FD | RO FEED |
| RO-FDD | RO FEED HIGH DIVERT TO RO BUFFER BASIN |
| RO-IA | RO INSTRUMENT AIR |
| RO-PE | RO PERMEATE |
| RO-PED RE | PERMEATE DIVERT TO RO BUFFER BASIN |
| RO-PEF | RE PERMEATE FLUSH TANK FILL |
| RO-PFR | RO PERMEATE FLUSH RINSE WATER |
| RS | RECIRCULATION PUMP SUCTION |
| RSD | RECIRCULATED SLUDGE |
| RTN | RETURN |
| RV | REFRIGERANT VAPOR |
| RVF | REVERSE FLOW |
| RWF | RAW WATER FLUSH |
| **-S-** | |
| SA | SERVICE AIR |
| SAH | SODA ASH |
| SAM | SAMPLE |
| SAN | SANITARY SEWER |
| SAS | SULFURIC ACID SOLUTION |
| SB-NEUT | SODIUM BISULFITE TO NEUTRALIZATION SYSTEM |
| SB-RO | SODIUM BISULFITE TO RO FEED PIPING |
| SB-UF4 | SODIUM BISULFITE TO UF SECONDARY SYSTEM |
| SBS | SODIUM BISULFITE SOLUTION |
| SC | SCUM |
| SCS | SODIUM CARBONATE SOLUTION |
| SD | STORM DRAIN (GRAVITY) |
| SE | SECONDARY EFFLUENT |
| SEP | SEPTAGE |
| SETW | SETTLED WATER |
| SGR | SURGE RELIEF |
| SHD | SODIUM HYDROXIDE |
| SHS | SODIUM HYPOCHLORITE SOLUTION |
| SH-TMC | SODIUM HYPOCHLORITE TO UF SECONDARY SKID FOR TMC |
| SH-UFCIP | SODIUM HYPOCHLORITE TO UF CIP SYSTEM |
| SI | SECONDARY INFLUENT |
| SLG | SLUDGE |
| SLG-BYP | SLUDGE BYPASS |
| SO2 | SULFUR DIOXIDE |
| SPD | SUMP PUMP DRAIN |
| SPS | SCREENED PRIMARY SLUDGE |
| SSAN | SANITARY SEWER |
| SSL | SECONDARY SLUDGE |
| ST | STEAM |
| STRM | STORM WATER |
| SU | DIGESTED SLUDGE SUPERNATANT |
| SW | SOFTENED WATER |
| SWR | SEAL WATER |
| **-T-** | |
| T | SLUDGE TRANSFER |
| TD | TANK DRAIN |
| TE | TERTIARY EFFLUENT |
| TG | TAIL GAS |
| THO | THICKENER OVERFLOW |
| TPS | THICKENED PRIMARY SLUDGE |
| TRW | TREATED WATER |
| TS | THICKENED SLUDGE |
| TWAS | THICKENED WASTE ACTIVATED SLUDGE |
| TWW | TERTIARY WASHWATER |
| **-U-** | |
| UFP-BWAS | UF PRIMARY BACKWASH AIR SCOUR |
| UFP-BWDV | UF PRIMARY BACKWASH DRAIN VENT |
| UFP-BWW | UF PRIMARY BACKWASH TO WASTE |
| UFP-CIRC | UF PRIMARY CIP CIRCULATION |
| UFP-CIPF | UF PRIMARY CIP FEED |
| UFP-CIPR | UF PRIMARY CIP RETURN |
| UFP-CIPTF | UF PRIMARY CIP TANK FILL |
| UFP-CIPN | UF PRIMARY CIP TO NEUTRALIZATION SYSTEM |
| UFP-DR | UF PRIMARY DRAIN |
| UFP-FD | UF PRIMARY FEED |
| UFP-FI | UF PRIMARY FILTRATE |
| UFP-IA | UF PRIMARY INSTRUMENT AIR |
| UFP-ITA | UF PRIMARY INTEGRITY TEST AIR |
| UFP-RFBW | UF PRIMARY REVERSE FLOW BACKWASH |
| UFP-RFFBWF | UF PRIMARY REVERSE FLOW BACKWASH FILL |
| UFS-BWAS | UF SECONDARY BACKWASH AIR SCOUR |

| ABBREV | PROCESS SYSTEM |
|---|---|
| **-U CONT-** | |
| UFS-BWDV | UF SECONDARY BACKWASH DRAIN VENT |
| UFS-BWW | UF SECONDARY BACKWASH TO WASTE |
| UFS-CIRC | UF SECONDARY CIP CIRCULATION |
| UFS-CIPF | UF SECONDARY CIP FEED |
| UFS-CIPR | UF SECONDARY CIP RETURN |
| UFS-CIPTF | UF SECONDARY CIP TANK FILL |
| UFS-CIPN | UF SECONDARY CIP TO NEUTRALIZATION SYSTEM |
| UFS-DR | UF SECONDARY DRAIN |
| UFS-FD | UF SECONDARY FEED |
| UFS-FI | UF SECONDARY FILTRATE |
| UFS-IA | UF SECONDARY INSTRUMENT AIR |
| UFS-ITA | UF SECONDARY INTEGRITY TEST AIR |
| UFS-RFBW | UF SECONDARY REVERSE FLOW BACKWASH |
| UFS-RFFBWF | UF SECONDARY REVERSE FLOW BACKWASH FILL |
| **-V-** | |
| VAC | VACUUM |
| VNT | VENT |
| VTR | VENT THROUGH ROOF |
| **-W-** | |
| WAS | WASTE ACTIVATED SLUDGE |
| WASS | WASTE ACTIVATED SLUDGE THICKENER SUBNATE |
| WLO | WASTE LUBE OIL |
| WO | WASTE OIL |
| WTL | WASTE LINE |
| WW | WASH WATER |

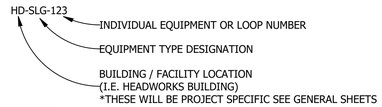
NOTES:
1. ALL SERVICES LISTED MAY NOT BE USED ON THIS PROJECT.
2. SEE PLANS FOR TRANSITIONS BETWEEN PIPE MATERIAL.
3. CONTRACTOR SHALL VERIFY THE PIPE SHOWS NO LEAKAGE UNDER NORMAL OPERATION CONDITIONS.
4. SHOW DIRECTION OF FLOW AND NAME OF CONTENT ON ALL LINES. COLOR CODING FOLLOWS TEN STATE STANDARDS WERE APPLICABLE.
5. DO NOT PAINT PVC, ALUMINUM, COPPER, GALVANIZED, OR STAINLESS STEEL PIPING.

# PIPE & EQUIPMENT TAG DESIGNATIONS

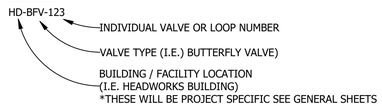
PIPE TAG




EQUIPMENT TAG




VALVE TAG




# GENERAL NOTES

1. THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INTERNATIONAL SOCIETY OF AUTOMATION, STANDARD PRACTICE ISA-S5.1 (2009). MODIFICATIONS MAY HAVE BEEN MADE FOR SPECIFIC PROJECT REQUIREMENTS.
2. THIS LEGEND SHEET IS GENERAL IN NATURE. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT. PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS.
3. PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS AND OTHER DISCIPLINES.
4. SOME CONTROL AND INTERLOCKING REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS MAY HAVE BEEN OMITTED FROM THE P&ID.

# EQUIPMENT TAG DESIGNATIONS

| ABBREV | EQUIPMENT ITEM |
|---|---|
| **-A-** | |
| AC | AIR COMPRESSOR |
| ABFV | ACTUATED BUTTERFLY VALVE |
| ABLV | ACTUATED BALL VALVE |
| AG | AGITATOR |
| AS | ABSORPTION SYSTEM |
| AV | ACTUATED VALVE |
| **-B-** | |
| B | BOILER |
| BCV | BALL CHECK VALVE |
| BFP | BACK FLOW PREVENTOR |
| BL | BLOWER |
| BFV | BUTTERFLY VALVE |
| BKS | BASKET STRAINER |
| BLV | BALL VALVE |
| **-C-** | |
| C | COMPRESSOR |
| CENT | CENTRIFUGE |
| CF | CHEMICAL FEED SYSTEM |
| CH | CHILLER |
| CKP | CAKE PUMP |
| CLD | CHLOINE LEAK DETECTOR |
| CLF | COALESCING FILTER |
| CON | CONDENSER |
| COV | CONTROL VALVE |
| CFP or CP | CENTRIFUGAL PUMP |
| CP | CONTROL PANEL |
| CTP | CHEMICAL TRANSFER PUMP |
| CV | CHECK VALVE |
| CVR | CONVERTERS |
| **-D-** | |
| DA | DEAERATOR |
| DF | DUPLEX FILTER |
| DIG | DIGESTOR |
| DMIN | DEMINERALIZER |
| DP | DIAPHRAGM PUMP |
| DR | DRIER |
| DRP | DIGESTER RECEPTION PIT |
| DT | DIGESTER MIX TANK |
| DV | DIAPHRAGM VALVE |
| **-E-** | |
| EM | ELECTRIC MOTOR |
| EP | EFFLUENT PIT |
| EWC | ELECTRIC WATER COOLER |
| EWH | ELECTRIC WATER HEATER |
| **-F-** | |
| F | FILTER |
| FF | FLARE |
| FAN | FAN |
| FCV | FLAPPER CHECK VALVE |
| FD | CHEMICAL FEEDER |
| FJS | FERRIC CHLORIDE INJECTION SYSTEM |
| FM | FLOW METER |
| FRR | FLUSH RECUCLE RESERVOIR |

| ABBREV | EQUIPMENT ITEM |
|---|---|
| **-G-** | |
| GB | GEAR BOX |
| GCA | GRANULAR CARBON ABSORPTION |
| GEN | GENERATOR |
| GV | GATE VALVE |
| **-H-** | |
| HC | HYPROCYCLONE |
| HPS | H2S POLISHING SYSTEM |
| HPU | HEAT PUMP UNIT |
| HSP | HIGH SERVICE PUMP |
| HST | HOIST |
| HTR | HEATER |
| HV | HAND VALVE |
| HX | HEAT EXCHANGER |
| **-I-** | |
| IA | INSTRUMENT AIR SYSTEM |
| INCLR | INTERCOOLER |
| INJ | CHLORINE INJECTOR |
| IS | IRON SPONGE |
| **-K-** | |
| KG | KNIFE GATE |
| KOP | KNOCK OUT POT |
| KV | KNIFE VALVE |
| **-M-** | |
| MA | MOTOR ACTUATOR |
| MB | MEMBRANE SYSTEM(S) |
| ME | MISC EQUIPMENT |
| MANV | MANUAL VALVE |
| MRS | MOISTURE REMOVAL SYSTEM |
| MTRV | MOTORIZED VALVE |
| MX | MIXER |
| MXP | MIXING PUMP |
| **-N-** | |
| NDV | NEEDLE VALVE |
| **-P-** | |
| P | PUMP |
| PA | PROCESS ANALYZER |
| PCV | PLUG CONCENTRIC VALVE |
| PEV | PLUG ECCENTRIC VALVE |
| PF | PRE-FILTER |
| PG | PRESSURE GAUGE |
| PHP | PH PROBE |
| PIV | PINCH VALVE |
| PJI | POLYMER INJECTION SYSTEM |
| PL | PIG LAUNCHER |
| PMP | PERISTALTIC METERING PUMP |
| PR | PIG RECEIVER |
| PRV | PRESSURE REDUCING VALVE |
| PV | PLUG VALVE |
| PVS | PRESSURE VESSEL |

| ABBREV | EQUIPMENT ITEM |
|---|---|
| **-R-** | |
| RS | REGULATION SKID (PRESSURE) |
| RSS | ROTARY SEPARATOR SYSTEM |
| **-S-** | |
| SCN | SCREW CONVEYOR |
| SCLIND | SCALE INDICATOR |
| SCN | SCREW CONVEYOR |
| SCV | SWING CHECK VALVE |
| SG | SLIDE GATE |
| SKD | SKID |
| SLG | SLUICE GATE |
| SOLV | SOLENOID VALVE |
| SP | STOP GATE OR SCREW PRESS |
| SPLP | SAMPLER PUMP |
| STR | STRAINER |
| SXR | SILOXANE REMOVAL |
| **-T-** | |
| TKA | TANK ABOVE GROUND |
| TKU | TANK BELOW GROUND |
| TURB | TURBIDITY METER |
| **-U-** | |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| **-V-** | |
| VFD | VARIABLE FREQUENCY DRIVE |
| VTP | VERTICAL TURBINE PUMP |
| **-W-** | |
| WFT | WAVE FEED TANK |
| WH | WATER HEATER |
| WSS | WAVE SEPARATOR SYSTEM |
| **-X-** | |
| XFMR | TRANSFORMER |

# ANSI PIPE PRESSURE CLASS

1ST LETTER - ANSI CLASS

| | |
|---|---|
| A | 150 CLASS |
| B | 300 CLASS |
| C | 600 CLASS |
| D | 900 CLASS |

# PIPE TYPE ABBREVIATIONS

| ABBREV | PIPE DESCRIPTION | SPEC SECTION |
|---|---|---|
| DI | DUCTILE IRON | 402040 |
| GIGL | DUCTILE IRON GLASS LINED | 402040 |
| WS-CL | WELDED STEEL CEMENT LINED | 402066 |
| PVC C90_ | PLASTIC PVC AWWA C900 | 402092 |
| PVC SCH __ | PLASTIC, PVC SCH 40 OR 80 | 402090/402091 |
| PVCDW | PLASTIC, PVC SCH 80 DOUBLE WALL | 221316 |
| DWV | PLASTIC, PVC DWV | 221316 |
| PVC ASTM | PLASTIC, PVC CLASS ASTM | 402092 |
| SST ___L | STAINLESS STEEL 304L, 316L | 402076 |
| PVC SAN OR FM | PVC SEWER PIPE | 333100 |
| PE | POLYETHYLENE TUBING | 433300 |
| CPVC | CHLORINATED POLYVINYL CHLORIDE | 402090/402091 |
| HDPE | HIGH DENSITY POLYETHYLENE PIPE | 400519 |
| CS SCH __ | CARBON STEEL, SCH 40 OR 80 | 402077 |
| FRP | FIBER REINFORCED PLASTIC | 402099 |
| BSP | BLACK STEEL PIPE | |
| CP | COPPER, TYPE L OR K | |

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|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# ODOR CONTROL IMPROVEMENTS PIPE SYSTEM CODES AND EQUIPMENT ABBREVIATIONS

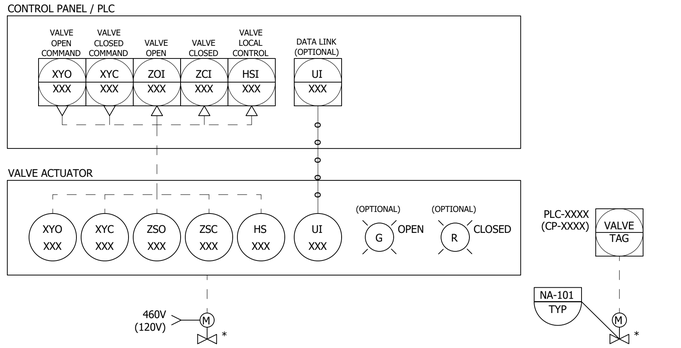
ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

ETHAN PAUL MEYER LICENSED 29115 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | ---- |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | **N-004** |
| SHEET NO: | 8 of 52 |




Last edit on: 6/26/2025 11:24 AM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011 P&ID.dwg Layout Name: N-004 Plotted By: JRH01823 Plotted on: 12/8/2025 2:35:45 PM





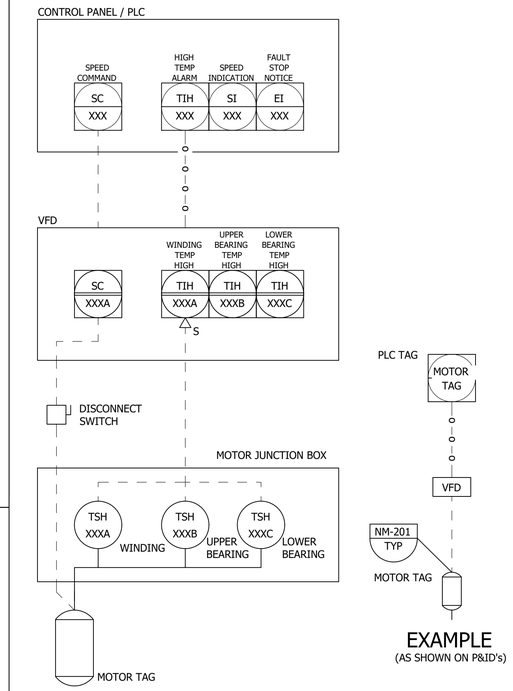


EXAMPLE
(AS SHOWN ON P&ID's)

* GENERIC VALVE SHOWN, CORRECT VALVE TYPE SHOWN ON P&ID.

NOTES:
1. THIS DETAIL IS TO BE USED WITH ISOLATION VALVES (OPEN OR CLOSED).
2. INSTRUMENT NUMBERS WILL MATCH THE VALVE NUMBER.

NA-101 TYP — MOTOR OPERATED - ISOLATION VALVE
NOT TO SCALE







EXAMPLE
(AS SHOWN ON P&ID's)

NOTES:
1. THIS DETAIL IS TO BE USED WITH MOTORS POWERED BY VARIABLE FREQUENCY DRIVES (VFD) AND LOCATED INDOORS WITHOUT MOTOR SPACE HEATERS.
2. TEMPERATURE SWITCHES SHALL BE WIRED IN SERIES WITH A FAULT IN ANY SWITCH CAUSING THE VFD TO SHUTDOWN THE MOTOR AND REPORT A FAULT TO THE PLC.
3. INSTRUMENT NUMBERS WILL MATCH THE MOTOR/PUMP NUMBER.
4. COMMUNICATIONS BETWEEN THE VFD AND PLC MAY BE ETHERNET OR HARDWIRED AND SHALL BE CALLED OUT ON THE CONTROL SCHEMATIC.
5. THIS DETAIL IS PROVIDED TO FACILITATE THE DEVELOPMENT OF THE MOTOR CONTROL SCHEMATIC. CONTRACTOR WILL SUBMIT THE CONTROL SCHEMATIC TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

NM-201 TYP — MOTOR CONTROL DETAIL
NOT TO SCALE

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|

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# ODOR CONTROL IMPROVEMENTS
# MOTOR CONTROL DETAILS

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

ETHAN PAUL MEYER
LICENSED
29115
4-16-26
KANSAS
PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | ---- |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | N-005 |
| SHEET NO: | 9 of 52 |



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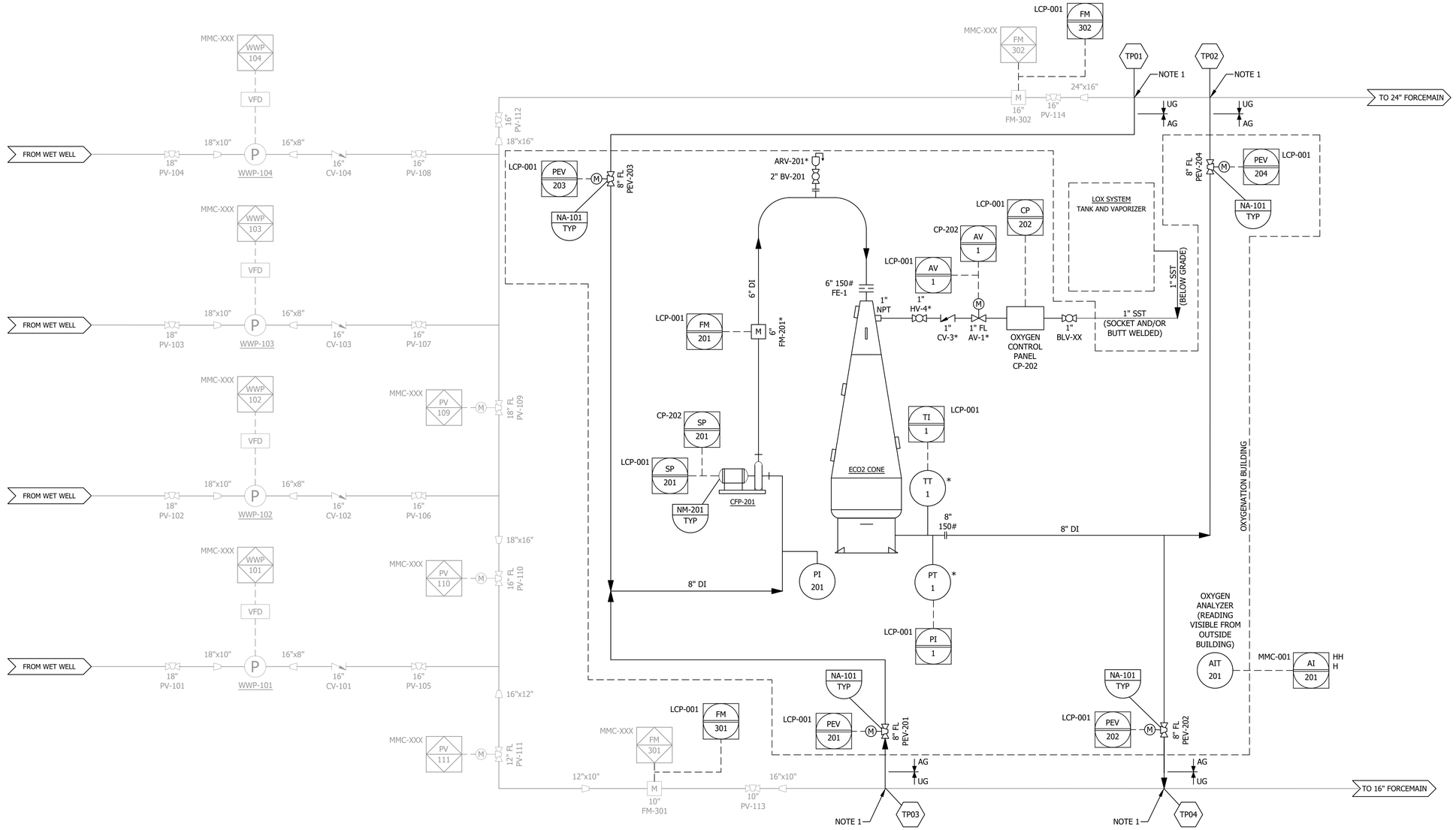
BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

CFP-201
SIDE STREAM PUMP
CAPACITY: 1400GPM
MOTOR POWER: 25HP

ECO2 CONE
DIMS: 4' DIA

LOX SYSTEM
CAPACITY: 3000 GAL
MAWP: 250 PSI
STORAGE PRESSURE: ~200 PSI




* PROVIDED BY EQUIPMENT VENDOR.

NOTES:
1. CONNECT TO EXISTING PIPE WITH SADDLE.
2. FOR INFORMATION ON THE LOX SYSTEM SEE VENDOR PACKAGE DOCUMENTATION.

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|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# ODOR CONTROL IMPROVEMENTS
# CENTRAL PARK PUMP STATION
# ECO2 CONE

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

ETHAN PAUL MEYER LICENSED 25115 KANSAS PROFESSIONAL ENGINEER 4-16-26

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | N-011 |
| SHEET NO: | 10 of 52 |




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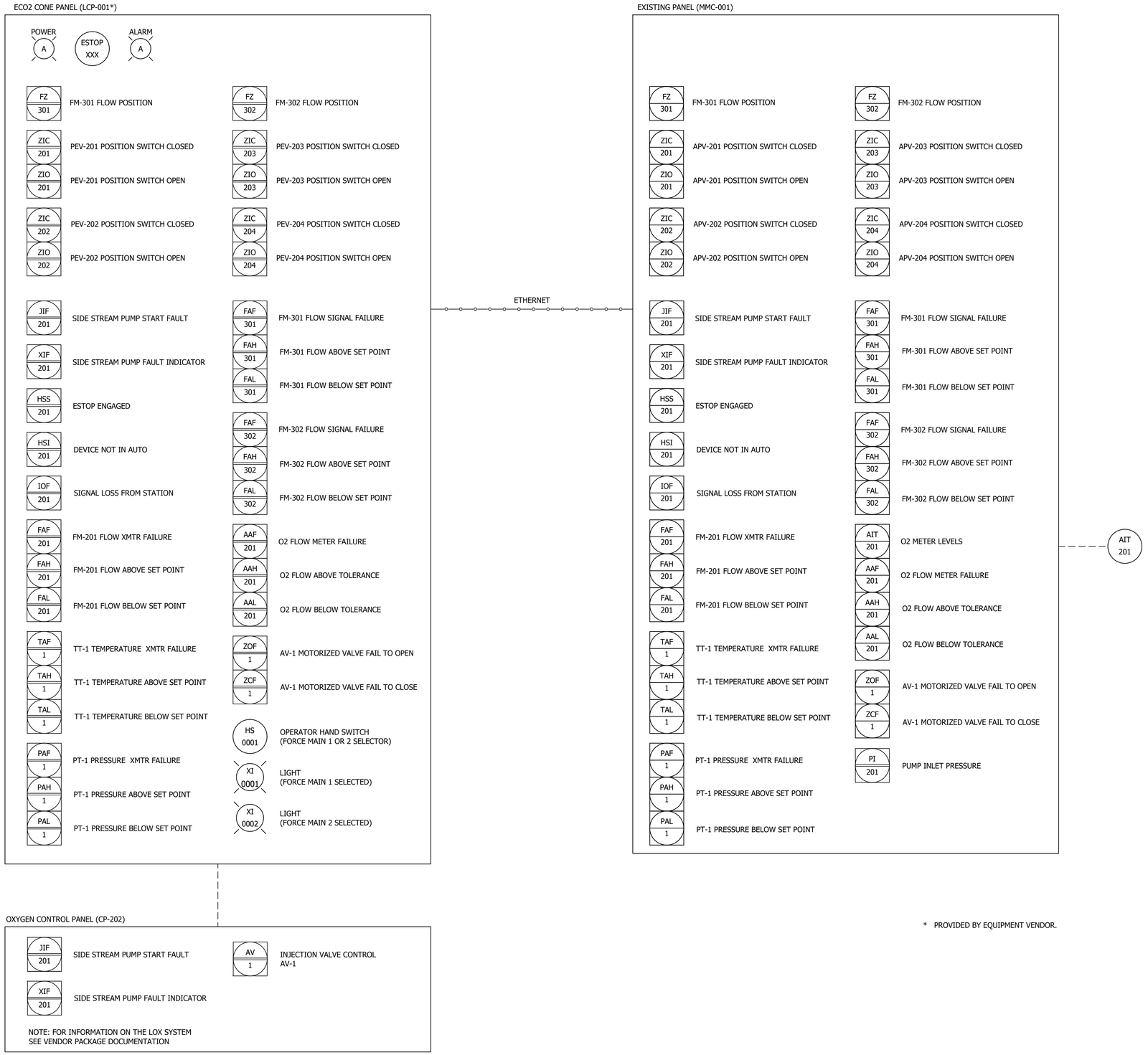


* PROVIDED BY EQUIPMENT VENDOR.

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|


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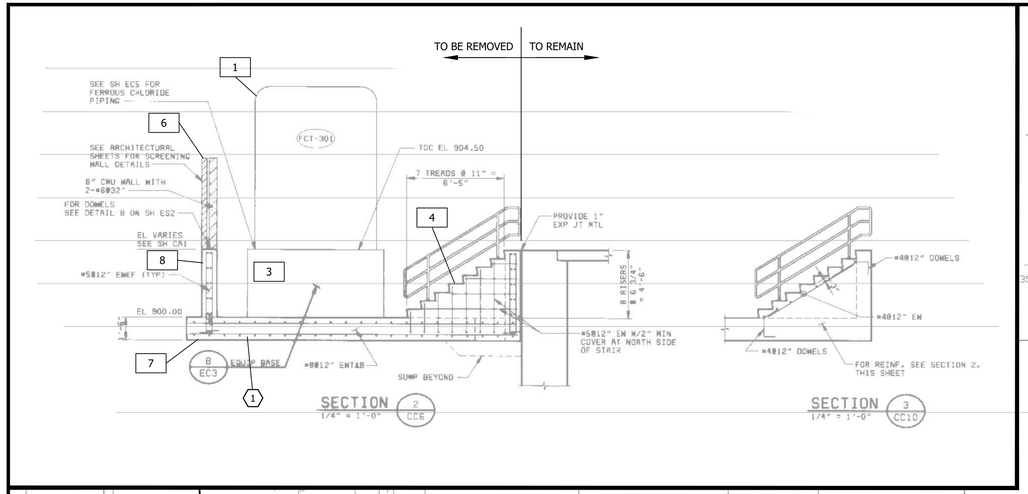
# ODOR CONTROL IMPROVEMENTS CENTRAL PARK PUMP STATION ECO2 CONTROL SIGNALS

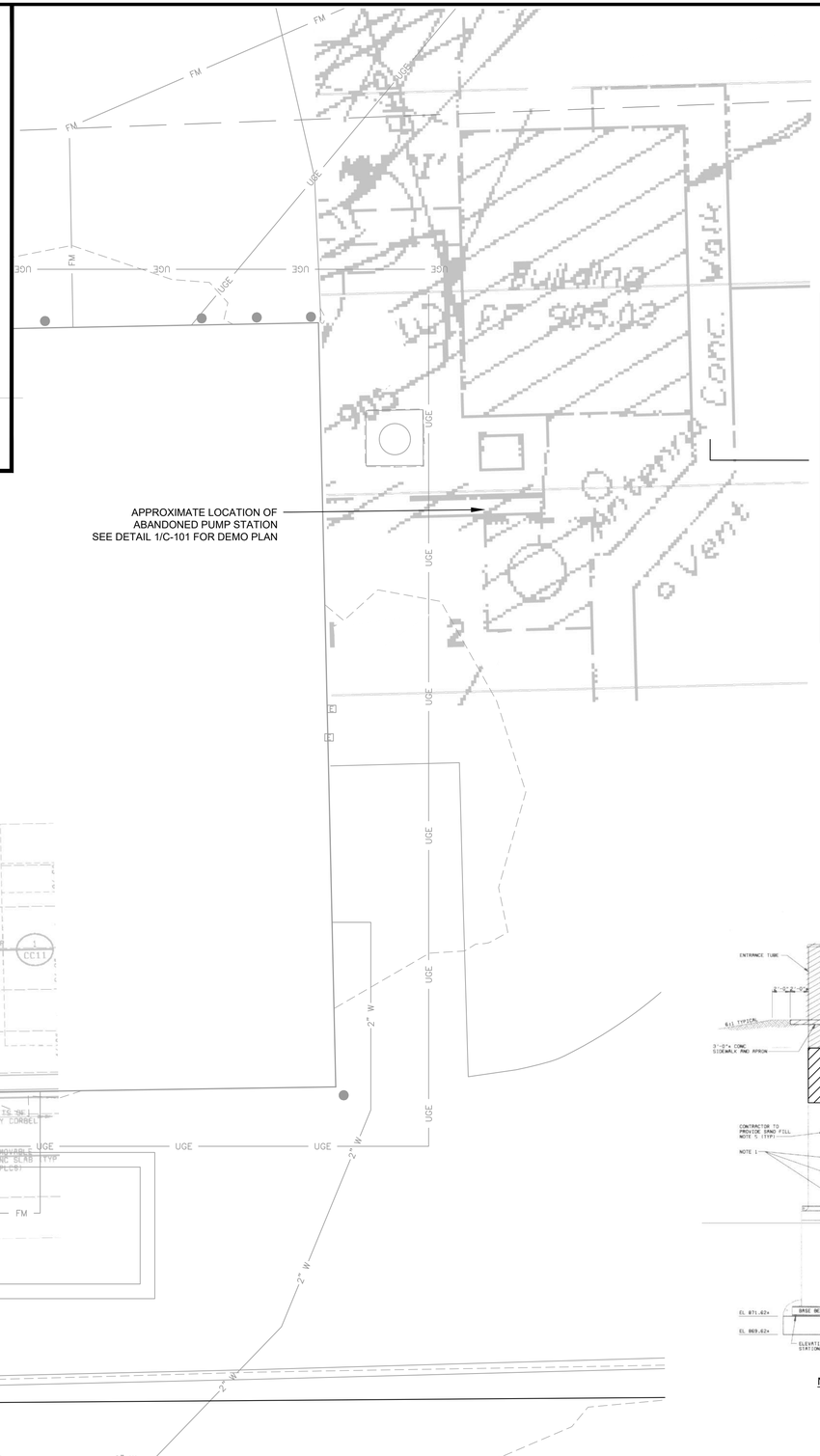
## ODOR CONTROL IMPROVEMENTS TOPEKA, KANSAS


| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | **N-012** |
| SHEET NO: | 11 of 52 |




Last edit on: 6/26/2025 11:24 AM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_P&ID.dwg Layout Name: N-012 Plotted By: JRH01823 Plotted on: 12/8/2025 3:36:10 PM




## CENTRAL PARK PUMP STATION DEMO PLAN

SCALE: 1"=5'

0 5' 10'

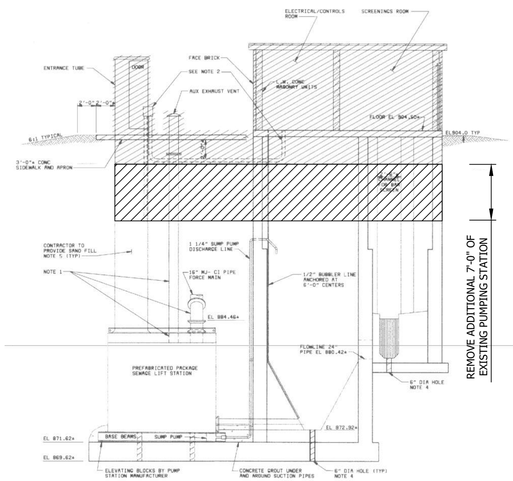
## GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND EXISTING CHEMICAL FEED SYSTEM SUPPLIER TO REMOVE AND SALVAGE EXISTING TANK, PIPING, VALVES AND PUMPS TO THE APPROPRIATE ENTITY.
2. THE CONTRACTOR'S SCHEDULE SHALL INDICATE WHEN THE EXISTING CHEMICAL TREATMENT SYSTEM MUST BE TAKEN OFFLINE, ALLOWING THE OWNER TO COORDINATE ITS REMOVAL WITH THE VENDOR.

## REFERENCE NOTES:

(1) EXISTING BELOW GRADE CONCRETE TO BE COMPLETELY REMOVED AND DISPOSED OF THIS AREA.

| ITEM NUMBER AND TASK | REMOVE & DISPOSE | REMOVE & RECYCLE | REMOVE & SALVAGE | REMOVE & REBUILD | REMAIN | DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | | | X | | | EXISTING BIOXIDE TANK |
| 2 | | | X | | | BIOXIDE CONTROL PANEL |
| 3 | X | | | | | CONCRETE TANK PEDESTAL |
| 4 | X | | | | | CONCRETE STAIRS INTO PIT |
| 5 | X | | | | | GUARDRAIL ON SOUTH SIDE OF PIT |
| 6 | X | | | | | EXISTING BRICK & BLOCK WALL |
| 7 | X | | | | | EXISTING CONCRETE FLOOR |
| 8 | X | | | | | EXISTING CONCRETE STEM WALL |
| 9 | | X | | | | EXISTING SUMP PUMP |
| 10 | X | | | | | EXISTING 1 1/2" CHEMICAL FEED PIPING |
| 11 | | | X | | | EXISTING CHEMICAL FEED PUMPS (2) |




NOTES:
1. STRUCTURE WAS PREVIOUSLY FILLED WITH SAND TO WITHIN 3 FEET OF FINAL GRADE.
2. CONTRACTOR TO BACKFILL EXCAVATED DEMOLITION AREA WITH SUITABLE BACKFILL AS PER THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

## 1 C-101 ABANDONED PUMP STATION DEMOLITION

NOT TO SCALE

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# ODOR CONTROL IMPROVEMENTS CENTRAL PARK PUMP STATION DEMO PLAN

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

ETHAN PAUL MEYER LICENSED 29115 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | C-101 |
| SHEET NO: | 12 of 52 |

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|



Last edit on: 12/8/2025 3:20 PM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_SITE PLAN.dwg Layout Name: Central Park Plan Demo Plotted By: JRH01823 Plotted on: 12/8/2025 3:38:11 PM

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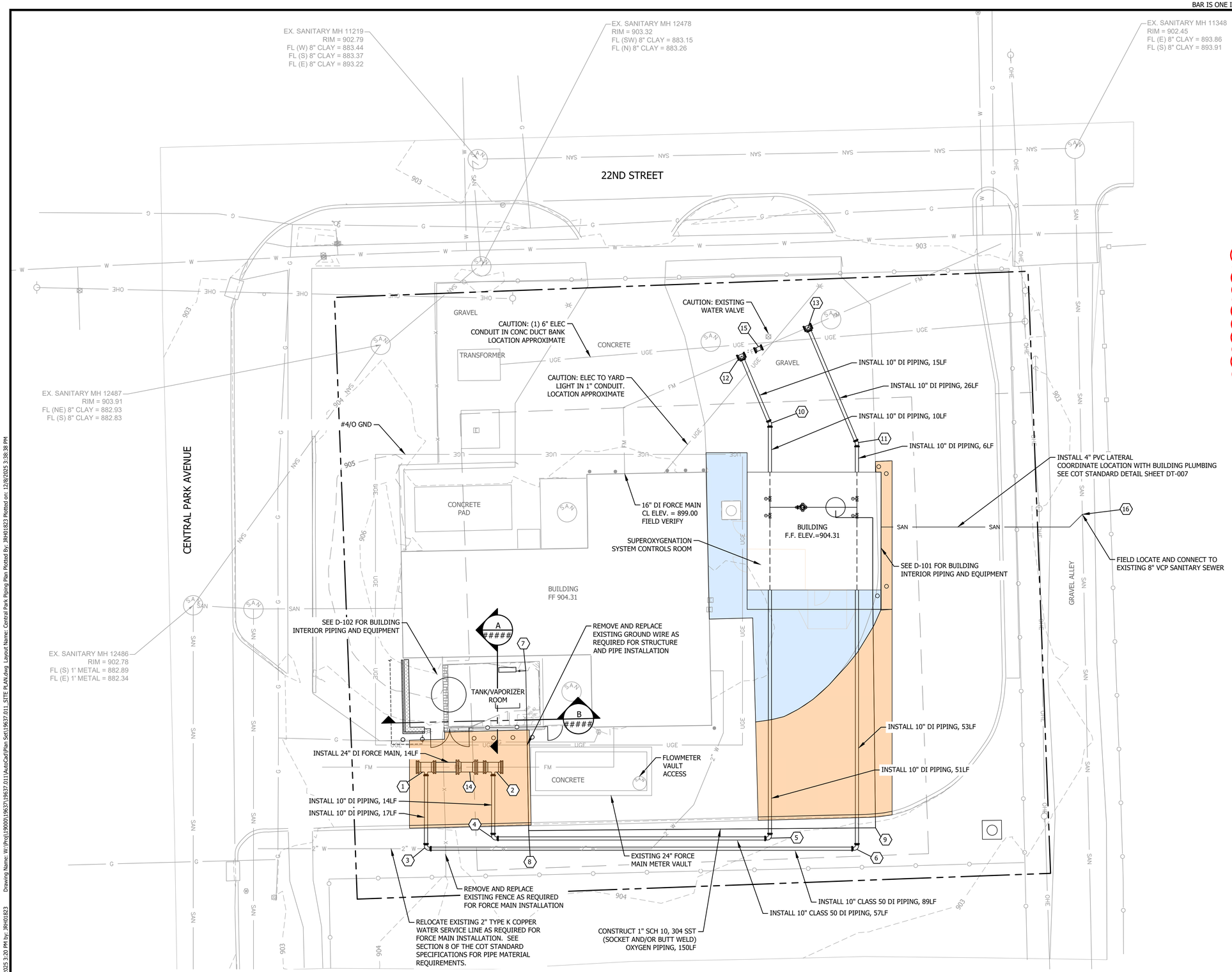


## CENTRAL PARK PUMP STATION SITE PIPING PLAN

SCALE: 1"=10'

0 10' 20'

## GENERAL NOTES

1. LIQUID OXYGEN (LOX) TANK AND VAPORIZER SYSTEM PACKAGE TO BE SUPPLIED AND INSTALLED BY SINGLE VENDOR. CONTRACTOR RESPONSIBLE FOR SINGLE CONNECTION TO LOX SYSTEM.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW PIPING.
3. ALL UNDERGROUND DUCTILE IRON PIPING TO BE RESTRAINED JOINT UNLESS OTHERWISE NOTED.
4. ALL PIPING 3" AND LARGER SHALL BE PROVIDED WITH (2) 4' LENGTHS OF PIPE FOR THE FIRST TWO JOINTS OUTSIDE A BUILDING OR TANK WALL UNLESS A GREATER NUMBER OF JOINTS IS SHOWN ON THE DRAWINGS.
5. ALL FORCE MAIN PIPING TO HAVE A MINIMUM BURY DEPTH OF 3'-6" AND A POSITIVE SLOPE TOWARDS THE NEW ODOR CONTROL BUILDING.

## REFERENCE NOTES:

1. 24" X 10" MJ DI RESTRAINED TEE N=261249.55, E=1968486.25
2. 24" X 10" MJ DI RESTRAINED TEE N=261249.55, E=1968500.15
3. 10" RJ DI 90 BEND N=261232.87, E=1968486.37
4. 10" RJ DI 90 BEND N=261235.06, E=1968500.21
5. 10" RJ DI 90 BEND N=261234.85, E=1968557.39
6. 10" RJ DI 90 BEND N=261232.77, E=1968575.05
7. 1" SST 90 BEND N=261269.43, E=1968506.86
8. 1" SST 90 BEND N=261236.49, E=1968507.44
9. 1" SST 90 BEND N=261237.03, E=1968579.06
10. 10" RJ DI 22.5 BEND N=261320.36, E=1968557.27
11. 10" RJ DI 22.5 BEND N=261316.39, E=1968575.17
12. 16" X 10" RJ DI RESTRAINED TEE N=261334.35, E=1968551.36
13. 16" X 10" RJ DI RESTRAINED TEE N=261340.30, E=1968565.09
14. 24" MJ DI RESTRAINED LONG SLEEVE
15. 16" MJ DI RESTRAINED LONG SLEEVE
16. INSTALL WYE FITTINGS (SDR 26, FULLY GASKETED) FOR SERVICE CONNECTIONS. (REFERENCE SECTION 9.03.B.d.iv – SERVICE (WYE) CONNECTIONS.) IF THE VCP IS DAMAGED DURING INSTALLATION, INSTALL 3 LF OF PVC SDR 26 ON EITHER SIDE AND USE A STRONG BACK RC 1002 SERIES COUPLER, OR APPROVED EQUIVALENT, TO TRANSITION FROM PVC TO VCP.

## LEGEND

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 3 | 12/10/2025 | CONFORMED SET | EPM |

Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
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# ODOR CONTROL IMPROVEMENTS CENTRAL PARK PUMP STATION SITE PIPING PLAN

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

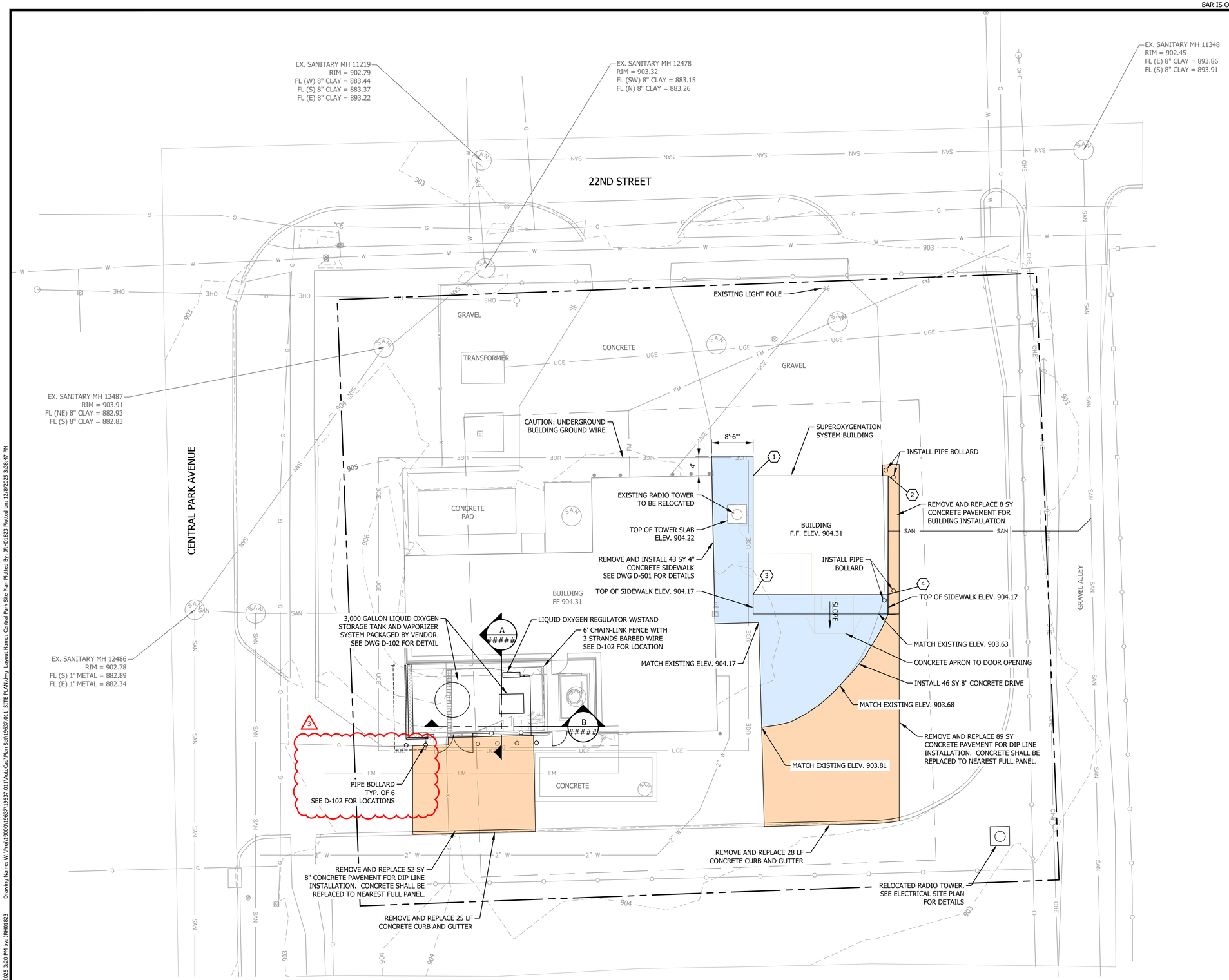
ETHAN PAUL MEYER LICENSED 29115 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | C-102 |
| SHEET NO: | 13 of 52 |



Last edit on: 12/8/2025 3:20 PM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_SITE PLAN.dwg Layout Name: Central Park Piping Plan Plotted By: JRH01823 Plotted on: 12/8/2025 3:38:38 PM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.




CENTRAL PARK PUMP STATION SITE PLAN
SCALE: 1"=10' 0 10' 20'

## GENERAL NOTES

1. LIQUID OXYGEN (LOX) TANK AND VAPORIZER SYSTEM PACKAGED BY SINGLE VENDOR. CONTRACTOR RESPONSIBLE FOR SINGLE CONNECTION TO LOX SYSTEM.

## REFERENCE NOTES:

1. NW CORNER ODOR CONTROL BUILDING N=261310.44, E=1968552.55
2. NE CORNER ODOR CONTROL BUILDING N=261310.44, E=1968580.21
3. SW CORNER ODOR CONTROL BUILDING N=261286.11, E=1968552.55
4. SE CORNER ODOR CONTROL BUILDING N=261286.11, E=1968580.21

## LEGEND

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# ODOR CONTROL IMPROVEMENTS CENTRAL PARK PUMP STATION SITE PLAN

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

EITHAN PAUL MEYER
LICENSED
29119
12-16-25
KANSAS
PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | ---- |
| DRAWN BY: | JRH |
| APPROVED BY: | ADW |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | C-103 |
| SHEET NO: | 14 of 52 |



Last edit on: 12/8/2025 3:20 PM by: JRH01823 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_SITE PLAN.dwg Layout Name: Central Park Site Plan Plotted By: JRH01823 Plotted on: 12/8/2025 3:38:47 PM

STRUCTURAL GENERAL NOTES

A. DESIGN CRITERIA

1. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC), 2021 EDITION, INCLUDING LOCAL SUPPLEMENTS. RISK CATEGORY III

2. DEAD AND LIVE LOADS:

SUPERIMPOSED DEAD LOAD: 10 PSF
SUPERIMPOSED ROOF LIVE LOAD: 20 PSF (NON-REDUCIBLE)

3. GRAVITY LOADS: 20 PSF GROUND SNOW LOAD PLUS DRIFTING
SNOW IMPORTANCE FACTER: 1.10

4. LATERAL LOADS (PER ASCE 7):

a. WIND: BASIC WIND SPEED: 118 MPH (3 SECOND GUST)
WIND EXPOSURE: B
INTERNAL PRESSURE COEF: +/- 0.18 (ENCLOSED)
b. SEISMIC:
SEISMIC IMPORTANCE FACTOR: 1.25
SEISMIC DESIGN CATEGORY: B
SITE CLASS: D
SS: 0.102
S1: 0.061
SDS: 0.109
SD1: 0.098

B. SOIL PREPARATION AND FOUNDATIONS

1. SOIL SUPPORTED FOUNDATIONS:

a. DESIGN BEARING PRESSURE (NET) IS 1500 PSF FOR FOUNDATIONS BEARING ON UNDISTURBED SOIL OR APPROVED ENGINEERED FILL MATERIAL. BEARING MATERIALS SHALL BE VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER.EXISTING PUMP STATION ABANDONED IN PLACE ON NORTH SIDE OF NEW BUILDING. ENGAGE A GEOTECHNICAL ENGINEER TO VERIFY EXISTING CONDITIONS AND REMOVE SOIL AND FILL PER THEIR RECOMMENDATIONS TO AVOID DIFFERENTIAL SETTLEMENTS.

b. ALL FOUNDATIONS ARE ASSUMED TO HAVE EARTH FORMED SIDES. THE CONSTRUCTED FOUNDATION DIMENSION SHALL BE NO LESS THAN THE DESIGN DIMENSION, AND NO MORE THAN 6" GREATER THAN THE DESIGN DIMENSION.

2. EXTERIOR SLABS SHALL SLOPE AWAY FROM THE STRUCTURE A MINIMUM OF 1/4" PER FOOT UNLESS NOTED OTHERWISE.

C. CAST-IN-PLACE CONCRETE

1. ALL STRUCTURAL CONCRETE HAS BEEN DESIGNED IN ACCORDANCE WITH THE ACI 318 AND THE BUILDING CODE, AND IN CONFORMANCE WITH THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE."

2. THE CONCRETE REQUIREMENTS ARE:

2.1. CEMENT SHALL BE TYPE I/II CONFORMING TO ASTM C150 OR TYPE IL (10) CONFORMING TO ASTM C595 UNLESS NOTED BELOW. FLY ASH CONFORMING TO ASTM C618 TYPE F MAY BE USEDTO REPLACE A PERCENTAGE OF THE CEMENT (BY WEIGHT - SEE LIMITS BELOW)

2.2. FINE AND COARSE AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 AND MEET #67 GRADATION REQUIREMENTS. COARSE AGGREGATES SHALL BE NO LESS THAN 50% OF THE TOTAL AGGREGATE BY WEIGHT, UNLESS APPROVED BY THE ENGINEER PRIOR TO MIX DESIGN SUBMITTAL. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE ¾".

c. MIX REQUIREMENTS ARE:

| LOCATION | MIN F'c | MAX W/CM | AIR ENT | NOTES |
|---|---|---|---|---|
| FOUNDATIONS | 4,500 PSI | 0.45 | 6% +/- 1.5% | ----- |
| INTERIOR SLABS | 4,000 PSI | N/A | 3% MAX | ----- |
| EXTERIOR SLABS | 5,000 PSI | 0.40 | 6% +/- 1.5% | 2 |

3. SUBMITTALS

a. PRODUCT DATA FOR PROPRIETARY MATERIALS AND ITEMS, INCLUDING REINFORCEMENT AND FORMING ACCESSORIES, ADMIXTURES, PATCHING COMPOUNDS, WATERSTOPS, JOINT SYSTEMS, CURING COMPOUNDS, MISCELLANEOUS MATERIALS, AND OTHERS IF REQUESTED BY ENGINEER.

b. SHOP DRAWINGS FOR REINFORCEMENT DETAILING FABRICATING, BENDING, AND PLACING CONCRETE REINFORCEMENT. COMPLY WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE "STRUCTURES" SHOWING BAR SCHEDULES, STIRRUP SPACING, BENT BAR DIAGRAMS, AND ARRANGEMENT OF CONCRETE REINFORCEMENT. INCLUDE SPECIAL REINFORCING REQUIRED FOR OPENINGS THROUGH CONCRETE STRUCTURES.

c. LABORATORY TEST REPORTS FOR CONCRETE MATERIALS AND MIX DESIGN TEST.

d. MATERIAL CERTIFICATES IN LIEU OF MATERIAL LABORATORY TEST REPORTS. MANUFACTURER AND CONTRACTOR, CERTIFYING THAT EACH MATERIAL ITEM COMPLIES WITH OR EXCEEDS SPECIFIED REQUIREMENTS, SHALL SIGN MATERIAL CERTIFICATES. PROVIDE CERTIFICATION FROM ADMIXTURE MANUFACTURERS THAT ADMIXTURES DO NOT CONTAIN CALCIUM CHLORIDE.

4. DESIGN MIXES

a. PREPARE DESIGN MIXES FOR EACH TYPE AND STRENGTH OF CONCRETE BY EITHER LABORATORY TRIAL BATCH OR FIELD EXPERIENCE METHODS AS SPECIFIED IN ACI 301.

b. SUBMIT WRITTEN REPORTS TO ENGINEER OF EACH PROPOSED MIX FOR EACH CLASS OF CONCRETE AT LEAST 15 DAYS PRIOR TO START OF WORK. DO NOT BEGIN CONCRETE PRODUCTION UNTIL ENGINEER HAS REVIEWED PROPOSED MIX DESIGNS.

6. MISCELLANEOUS CONCRETE DETAILS:

a. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" INSIDE FORMS OR TOOLED TO 3/4" RADIUS U.N.O.

b. SLABS ON GRADE SHALL HAVE CONSTRUCTION JOINTS AND CONTROL JOINTS (SAWN JOINTS) TO DIVIDE THE SLAB INTO PANELS AS INDICATED. PROPOSED LOCATIONS FOR ACTUAL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL.

c. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING, TEMPORARY BRACING AND SHORING.

d. NO ALUMINUM SHALL BE EMBEDDED IN CONCRETE.

e. CONDUITS AND PIPING EMBEDDED IN CONCRETE SHALL BE SPACED A MINIMUM OF FOUR DIAMETERS CENTER TO CENTER. OUTSIDE DIAMETERS SHALL BE LESS THAN 30% OF THE MEMBER THICKNESS. EMBEDDED ITEMS SHALL BE PLACED BETWEEN LAYERS OF REINFORCING.

D. PRECAST CONCRETE

1. ALL PRECAST/PRESTRESSED CONCRETE PRODUCTS SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE, ACI 318 AND THE "PCI DESIGN HANDBOOK." SHOP DRAWINGS AND CALCULATIONS OF PRECAST/PRESTRESSED PRODUCTS AND CONNECTIONS SHALL BE SUBMITTED BEARING THE SEAL OF AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. PRECAST/PRESTRESSED SUPPLIER SHALL BE CERTIFIED BY PCI.

2. SUBMITTAL REQUIREMENTS:

a. A COMPLETE DESIGN ANALYSIS SHOWING ALL CALCULATIONS FOR ROOF MEMBERS AND EMBEDDED ITEMS.

b. SHOP DRAWINGS SHALL INCLUDE DETAILS OF ALL MAIN MEMBERS, CONNECTIONS (SHOWING BOLT HOLES AND WELDS), AND ERECTION DRAWINGS.

c. SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED BEARING THE SEAL OF AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. THE ENGINEER THAT SEALS THE SHOP DRAWINGS AND CALCULATIONS SHALL INCLUDE THE FOLLOWING CERTIFICATION: "I, _____, PE, DO HEREBY CERTIFY THAT I HAVE PERSONALLY REVIEWED THE CONTRACT DRAWINGS AND SPECIFICATIONS. FURTHER, I HAVE INCORPORATED ALL PERFORMANCE CRITERIA SPECIFIED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS INTO THE SHOP DRAWINGS AND CALCULATIONS SUBMITTED FOR APPROVAL. I UNDERSTAND THAT ANY PERFORMANCE CRITERIA THAT WAS NOT INCORPORATED INTO THE SHOP DRAWINGS AND CALCULATIONS IS GROUNDS FOR REJECTION."

3. ADDITIONAL DESIGN REQUIREMENTS ARE:

a. BEARING PADS SHALL BE DESIGNED AND SUPPLIED BY THE PRECAST MANUFACTURER. THE MINIMUM THICKNESS OF BEARING PADS SHALL BE 1/4" FOR MEMBERS AND 1/8" X 2" BEARING STRIPS FOR SLABS UNLESS NOTED OTHERWISE. BEARING PADS SHALL BE LOCATED A MINIMUM OF 1/2" AWAY FROM THE FACE OF THE SUPPORT.

b. MEMBERS SHALL NOT BE REMOVED FROM THE FORMS UNTIL THE CONCRETE HAS REACHED SUFFICIENT STRENGTH TO BOND WITH THE REINFORCING WITHOUT DAMAGE. IN NO CASE, SHALL PRECAST MEMBERS BE REMOVED PRIOR TO ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI. PRESTRESSED MEMBERS SHALL NOT BE REMOVED PRIOR TO ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI.

c. PRECAST MEMBERS AND THEIR CONNECTIONS SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE PLANS.

d. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI MINIMUM.

e. OPENINGS LARGER THAN 10" SHALL BE FORMED AND CAST INTO THE MEMBERS. REF. ARCHITECTURAL, CIVIL, ELECTRICAL, AND MECHANICAL PLANS FOR ADDITIONAL OPENING LOCATIONS NOT FOUND ON STRUCTURAL PLANS.

F. DIAPHRAGM SHEAR CONNECTIONS SHALL BE SPACED AT A MAXIMUM OF 10' O.C., WITH 2 CONNECTIONS PER PANEL MINIMUM. [DIAPHRAGM CHORD CONNECTIONS SHALL BE DESIGNED TO RESIST THE AXIAL CHORD FORCES/TOPPING SLAB REINFORCING HAS BEEN SIZED TO RESIST AXIAL CHORD FORCES].

E. CONCRETE REINFORCING (CAST-IN-PLACE, & PRECAST)

1. MATERIALS:

| | ASTM | GRADE |
|---|---|---|
| REINFORCING BARS: | A615 | 60 |
| WELDED WIRE FABRIC (WWF): | A185 60 (MIN.) | |
| HEADED STUDS: | A108 --- | |

2. DETAILS:

a. WELDING OF REINFORCING BARS IS PROHIBITED UNLESS NOTED OTHERWISE. WHEN WELDING IS APPROVED, WELDING SHALL BE IN ACCORDANCE WITH AWS D1.4 "WELDING REINFORCING STEEL, ETC."

b. WELDED WIRE FABRIC SHALL BE FURNISHED IN FLAT SHEETS.

c. SHOP DRAWINGS SHALL BE SUBMITTED WITH REINFORCING STEEL IN ACCORDANCE WITH ACI 315.

3. PLACEMENT

a. ALL REINFORCING (BARS, EMBEDMENTS, WWF, ETC.) SHALL BE SUPPORTED ON CHAIRS/BOLSTERS TO THE DESIGN DIMENSIONS. SPACING SHALL BE SUFFICIENTLY CLOSE TO PREVENT DISPLACEMENT OR PERMANENT DEFORMATION DUE TO CONCRETE PLACEMENT, FOOT TRAFFIC, OR VIBRATION. "PUDDLING IN" OR "PULLING UP" REINFORCING IS NOT AN ACCEPTABLE METHOD FOR PLACING REINFORCING. CHAIRS/BOLSTERS IN CONTACT WITH EARTH SHALL HAVE BOTTOM PLATES AND BE COATED TO PREVENT CORROSION.

b. MAINTAIN ACI CLEAR COVER ON REINFORCING AS LISTED BELOW UNLESS NOTED OTHERWISE.

CAST AGAINST EARTH (BOTTOM OR SIDES): 3"
SLABS ON GRADE (FROM BOTTOM OF SLAB): 3"

c. PROVIDE CORNER BARS OF THE SAME SIZE AND SPACING AS ADJACENT REINFORCING. REFERENCE DETAILS.

d. ALL REINFORCING BARS ARE TO BE MADE CONTINUOUS OR LAPPED NOT LESS THAN 48 BAR DIAMETERS.

e. WELDED WIRE FABRIC SHALL BE MADE CONTINUOUS BY LAPPING ONE FULL SQUARE PLUS 2".

4. MASONRY

1. MASONRY HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE.

2. MATERIALS:

a. ALL CONCRETE MASONRY UNITS (CMU) SHALL BE TWO-CELL, LIGHTWEIGHT AGGREGATE UNITS WITH A SPECIFIED MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON NET AREA (1500 PSI ON GROSS AREA) AT 28 DAYS CONFORMING TO ASTM C90. CMU LOCATED BELOW GRADE, SHALL BE NORMAL-WEIGHT AGGREGATE UNITS.

b. ALL MORTAR SHALL BE TYPE "S" WITH A MINIMUM MORTAR COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS CONFORMING TO ASTM C270. THE MINIMUM COMPRESSIVE STRENGTH (F'M) OF A PRISM ASSEMBLED OF CMU AND MORTAR SHALL BE 1500 PSI AT 28 DAYS ON THE NET AREA.

c. GROUT SHALL CONFORM TO ASTM C476 WITH 3/8" AGGREGATE WITH TYPE I CEMENT, A MAXIMUM WATER/CEMENT RATIO OF 0.65, AND A SLUMP OF 5 TO 9 INCHES. THE MINIMUM GROUT COMPRESSIVE STRENGTH (F'C) SHALL BE 3000 PSI.

d. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GR. 60.

5. HORIZONTAL WALL REINFORCING:

a. PROVIDE HORIZONTAL REINFORCING IN EXTERIOR WALLS AT WINDOW/DOOR HEAD ELEVATIONS, TOP OF THE WALL AND AT A MAXIMUM SPACING OF 8'-0" ON CENTER. MINIMUM HORIZONTAL REINFORCING SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

WALL THICKNESS REINFORCING

8" (2)-#5

b. HORIZONTAL REINFORCING SHALL BE IN KNOCK-OUT BOND BEAMS UNLESS AT THE WINDOW/DOOR HEAD OR AT BEAM BEARING. AT THE WINDOW/DOOR HEAD AND AT THE BEAM BEARING, THE REINFORCING SHALL BE PLACED IN SOLID BOTTOM LINTEL BEAM. CUT OFF THE BOTTOM SHELL OF LINTEL BLOCKS AT VERTICAL REINFORCING LOCATIONS.

6. VERTICAL REINFORCING:

a. PROVIDE VERTICAL REINFORCING (NORMAL REINFORCING) IN FULLY GROUTED CELLS, CENTERED AND HELD IN PLACE BY REBAR POSITIONERS, IN ALL WALLS AS INDICATED.

b. PROVIDE AN ADDITIONAL VERTICAL REINFORCING BAR IN FULLY GROUTED CELLS, WITH SAME SIZE AS NORMAL REINFORCING BAR, AT EACH SIDE OF AN ISOLATION JOINT, AT INTERSECTIONS OF WALLS, EACH SIDE OF A WALL OPENING, AT EACH BEAM BEARING, AND AT END OF A WALL.

c. VERTICAL REINFORCING SHALL EXTEND CONTINUOUSLY FROM TOP OF SUPPORTING MEMBER TO THE TOP BOND BEAM. THERE SHALL BE A DOWEL, CAST INTEGRAL WITH SUPPORTING MEMBER, FOR EACH VERTICAL REINFORCING BAR EXCEPT AS NOTED. HOOK VERTICAL BARS INTO TOP BOND BEAM. ALL HOOKS AND STRAIGHT EMBEDMENTS SHALL BE ACI STANDARD. ALL BARS SHALL LAP 48 DIAMETERS BUT NOT LESS THAN 24".

7. ALL MASONRY IN CONTACT WITH SOIL SHALL BE NORMAL-WEIGHT UNITS AND HAVE ALL VOIDS FILLED WITH GROUT.

F. PREFABRICATED METAL TRUSSES

1. METAL TRUSSES AND TRUSS CONNECTIONS SHALL BE PROVIDED BY THE TRUSSTEEL DIVISION OF ALPINE ENGINEERED PRODUCTS, INC., OR AN APPROVED EQUAL. INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS IS BASED ON TRUSSTEEL DOCUMENTATION. ANY SUBSTITUTION SHALL MEET THE SAME REQUIREMENTS AND CAPACITIES AS PUBLISHED BY TRUSSTEEL.

2. ALL METAL TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND THE LATEST VERSIONS OF THE ASII AND LGSEA.

3. METAL TRUSS SYSTEMS SHALL BE DESIGNED BY THE TRUSS SYSTEMS ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED FOR THE LOADS NOTED IN SECTION A "DESIGN CRITERIA" INCLUDING SNOW DRIFTING AND LATERAL LOADS IN ADDITION TO THE FOLLOWING CRITERIA:

a. NET UPLIFT LOAD: 20 PSF
b. MAXIMUM DEFLECTION UNDER LIVE LOAD: L/360
c. MAXIMUM DEFLECTION UNDER TOTAL LOAD: L/240
d. LOADS INDICATED ON PLANS
e. TOP & BOTTOM CHORD MINIMUM THICKNESS: 20 GA.

4. THE TRUSS SYSTEM DESIGN AND SUBMITTAL SHALL INCLUDE:

a. TRUSS ERECTION PLAN INDICATING LOCATIONS AND TRUSS DESIGNATIONS
b. TEMPORARY AND PERMANENT BRIDGING SIZES AND LOCATIONS.
c. TRUSS DESIGN CALCULATIONS.

5. ALL PAGES OF THE TRUSS SYSTEM SUBMITTAL SHALL BE SIGNED AND SEALED BY THE SAME TRUSS SYSTEM ENGINEER, PRIOR TO SUBMITTAL FOR REVIEW. TRUSSES SHALL NOT BE FABRICATED UNTIL THE SUBMITTAL HAS BEEN APPROVED BY THE ARCHITECT OR ENGINEER OF RECORD. ALL PAGES OF THE TRUSS SYSTEM SUBMITTAL SHALL INDICATE:

a. THE NAME, ADDRESS, TELEPHONE NUMBER, AND FACSIMILE NUMBER OF THE TRUSS SYSTEM ENGINEER.
b. THE PROJECT NAME AND ADDRESS.
c. INDICATION OF THE APPLICABLE CODES USED TO DESIGN THE TRUSS SYSTEM.
d. IDENTIFICATION OF THE COMPUTER PROGRAM USED TO DESIGN THE TRUSS SYSTEM.

6. CERTIFICATION OF SHOP DRAWINGS AND DESIGN CALCULATIONS:

a. THE ENGINEER THAT SEALS THE SHOP DRAWINGS AND CALCULATIONS SHALL INCLUDE THE FOLLOWING CERTIFICATION: "I,_____, PE, DO HEREBY CERTIFY THAT I HAVE PERSONALLY REVIEWED THE CONTRACT DRAWINGS AND SPECIFICATION. FURTHER, I HAVE INCORPORATED ALL PERFORMANCE CRITERIA SPECIFIED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS INTO THE SHOP DRAWINGS AND CALCULATIONS SUBMITTED FOR APPROVAL. I UNDERSTAND THAT ANY PERFORMANCE CRITERIA THAT WAS NOT INCORPORATED INTO THE SHOP DRAWINGS AND CALCULATIONS IS GROUNDS FOR REJECTION."

7. TRUSSES SHALL BE DESIGNED AND FABRICATED TO CONFORM TO THE GEOMETRY SHOWN. WEB CONFIGURATIONS ARE FOR ILLUSTRATION ONLY AND SHALL BE DESIGNED BY THE TRUSS SYSTEMS ENGINEER.

8. INDIVIDUAL MEMBERS OF TRUSSES AND CONNECTIONS SHALL BE SYMMETRICAL ABOUT THE VERTICAL AXIS.

9. CONNECTION PLATES SHALL BE SIZED FOR AXIAL LOADS OF MEMBERS, ECCENTRICITY, AND NET SECTION OF METAL.

10. ALL TRUSSES SHALL BE ANCHORED TO ALL BEARING POINTS WITH FRAMING ANCHORS.

11. PROVIDE ADEQUATE ANCHORAGE AND BRACING DURING ERECTION.

F. STRUCTURAL WOOD

1. ALL WOOD STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).

2. THE DESIGN OF THE STRUCTURE IS BASED UPON THE USE OF THE FOLLOWING PRODUCTS:

a. ROOF SHEATHING SHALL BE 15/32" APA RATED PLYWOOD OR ORIENTED STRAND BOARD, 32/16 SPAN RATING, EXPOSURE 1, LAID IN A CONTROLLED RANDOM STAGGERED PATTERN, WITH EDGE CLIPS OR SOLID BLOCKING BETWEEN SUPPORTS, LONG PANEL DIMENSION PERPENDICULAR TO THE FRAMING MEMBERS, AND CONTINUOUS OVER A MINIMUM OF THREE SUPPORTS. ALLOW FOR 1/8" GAP AT ALL PANEL EDGE AND END JOINTS UNLESS OTHERWISE RECOMMENDED BY MANUFACTURER.

b. ALL WOOD PRODUCTS IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

3. CONNECTIONS SHALL MEET THE FOLLOWING REQUIREMENTS:

a. ATTACH ROOF SHEATHING WITH #10 SCREWS AT 6" O.C. ALONG PANEL EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS, U.N.O.

G. MISCELLANEOUS

1. DO NOT SCALE PLANS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.

2. DETAILS LABELED "TYPICAL" ARE INTENDED TO REPRESENT A CONDITION THAT OCCURS AT SEVERAL LOCATIONS IN THE PLANS WHETHER OR NOT THE DETAIL WAS REFERENCED.

3. THE STRUCTURAL PLANS REPRESENT THE STRUCTURE IN THE COMPLETED CONDITION. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR THE MEANS AND METHODS OF CONSTRUCTING THE STRUCTURE. THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY SHORING OR BRACING REQUIRED TO SAFELY CONSTRUCT THE STRUCTURE AND PREVENT DAMAGE TO THE STRUCTURE DURING CONSTRUCTION.

4. SLABS ON GRADE AND ELEVATED SLABS ARE NOT DESIGNED TO SUPPORT CRANES, FORKLIFTS, MANLIFTS, OR TRUCK TRAFFIC UNLESS NOTED AS SUCH. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF CONSTRUCTION EQUIPMENT CAN BE SAFELY OPERATED ON SLABS ON GRADE AND ELEVATED SLABS AND TO REPAIR ANY DAMAGE SUCH EQUIPMENT MAY CAUSE.

5. THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMITTAL, NOTING ALL CHANGES MADE THAT DO NOT COMPLY WITH THE CONSTRUCTION DOCUMENTS.

6. ON NEW CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL ARCHITECTURAL, ELECTRICAL, AND MECHANICAL OPENINGS AND EQUIPMENT WEIGHTS PRIOR TO COMMENCING CONSTRUCTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ATTACHING NON-STRUCTURAL ELEMENTS TO THE STRUCTURE TO RESIST ALL LOADS INCLUDING SEISMIC FORCES IN A WAY THAT DOES NOT OVERSTRESS STRUCTURAL MEMBERS. NON-STRUCTURAL ELEMENTS CAN BE FOUND IN THE ARCHITECTURAL, ELECTRICAL, OR MECHANICAL PLANS.

8. WHEN THE CONTRACTOR OR HIS SUBCONTRACTOR(S) FAILS TO CONSTRUCT ANY PORTION OF THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REMEDIATION OF THE DEFECT AND ALL RELATED COSTS INCLUDING ENGINEERING SERVICES. WHEN A DEFECT IS FIRST IDENTIFIED, IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION. THE ENGINEER MAY THEN REQUIRE THE CONTRACTOR TO MODIFY/REPLACE THE ELEMENT TO RECTIFY THE SITUATION, OR REQUIRE THE CONTRACTOR TO SUBMIT A RECOMMENDED REPAIR SEALED BY A LICENSED ENGINEER FOR APPROVAL.

9. WHEN THE CONTRACTOR, SUB-CONTRACTOR, OR MATERIAL SUPPLIER PROVIDES A PIECE OF EQUIPMENT THAT IS DIFFERENT FROM THE EQUIPMENT THAT THE STRUCTURE IS DESIGNED FOR BY EITHER SIZE, WEIGHT, OR CONFIGURATION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REMEDYING THE SITUATION. THOSE COSTS SHALL INCLUDE THE COSTS TO HIRE A LICENSED ENGINEER TO REDESIGN PORTIONS OF THE STRUCTURE OR THE COSTS OF THE ENGINEER OF RECORD TO REDESIGN PORTIONS OF THE STRUCTURE TO ACCOMMODATE THE SUBSTITUTED PIECE OF EQUIPMENT.

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|

Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
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www.bartlettwest.com

# ODOR CONTROL IMPROVEMENTS
# GENERAL NOTES

ODOR CONTROL IMPROVEMENTS
CENTRAL PARK PUMP STATION
TOPEKA, KANSAS

MICHAEL J. NEUFELD LICENSED # 20097 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | LDM |
| DRAWN BY: | JRW |
| APPROVED BY: | MJN |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | S-001 |
| SHEET NO: | 15 of 53 |



Last edit on: 9/4/2025 8:01 AM by: JNW0381 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_S-100.dwg Layout Name: STRUCTURAL GENERAL NOTES Plotted By: JNW0381 Plotted on: 9/4/2025 10:57:25 AM

**STATEMENT OF SPECIAL INSPECTIONS**

1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY AN INDEPENDANT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS, UNLESS WAIVED BY THE BUILDING OFFICIAL (SEE IBC CHAPTER 17).
2. THE NAMES AND CREDENTIALS OF THE SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL.
3. DUTIES OF THE SPECIAL INSPECTOR:
   - 3.1. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE 2018 IBC.
   - 3.2. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER, AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL.
   - 3.3. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE 2018 IBC.
3. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR:
   - 3.1. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH IBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED WITHIN THIS "STATEMENT OF SPECIAL INSPECTIONS".
   - 3.2. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED.
   - 3.3. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR.
4. SEE THE "SPECIAL INSPECTION SCHEDULE" FOR THE TYPES, EXTENTS, AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.
   - 4.1. CONTINUOUS INSPECTIONS: CONSTANT MONITORING OF IDENTIFIED TASKS BY A SPECIAL INSPECTOR OVER THE DURATION OF PERFORMANCE OF SAID TASKS.
   - 4.2. PERIODIC INSPECTIONS: OBSERVE THESE TASK ITEMS PERIODICALLY DURING THE COURSE OF EACH WORK DAY TO INSURE THAT APPLICABLE REQUIREMENTS ARE BEING MET. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS AT CONTRACTOR'S RISK.

**SPECIAL INSPECTION SCHEDULE**

**STEEL INSPECTIONS**

STEEL INSPECTION **PRIOR TO** WELDING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.4-1
1. CONTINUOUS INSPECTIONS
   - 1.1. VERIFY THAT THE WELDING PROCEDURES SPECIFICATION (WPS) IS AVAILABLE.
   - 1.2. VERIFY MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES ARE AVAILABLE.
   - 1.3. VERIFY MATERIAL IDENTIFICATION.
     - 1.3.1. TYPE AND GRADE
   - 1.4. WELDER IDENTIFICATION SYSTEM.
     - 1.4.1. THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE.
2. PERIODIC INSPECTIONS
   - 2.1. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY).
     - 2.1.1. JOINT PREPARATION
     - 2.1.2. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)
     - 2.1.3. CLEANLINESS (CONDITION OF STEEL SURFACES)
     - 2.1.4. TACKING (TACK WELD QUALITY AND LOCATION)
     - 2.1.5. BACKING TYPE AND FIT (IF APPLICABLE)
   - 2.2. CONFIGURATION AND FINISH OF ACCESS HOLES.
   - 2.3. FIT-UP OF FILLET WELDS.
     - 2.3.1. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)
     - 2.3.2. CLEANLINESS (CONDITION OF STEEL SURFACES)
     - 2.3.3. TACKING (TACK WELD QUALITY AND LOCATION)

STEEL INSPECTION **DURING** WELDING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.4-2
1. CONTINUOUS INSPECTIONS
   - 1.1. USE OF QUALIFIED WELDERS.
     - 1.1.1. WELDING BY WELDERS, WELDING OPERATORS, AND TACK WELDERS WHO ARE QUALIFIED IN CONFORMANCE WITH REQUIREMENTS.
2. PERIODIC INSPECTIONS
   - 2.1. CONTROL AND HANDLING OF WELDING CONSUMABLES.
     - 2.1.1. PACKAGING
     - 2.1.2. ELECTRODE ATMOSPHERIC EXPOSURE CONTROL
3. NO WELDING OVER CRACKED TACK WELDS.
4. ENVIRONMENTAL CONDITIONS.
   - 4.1. WIND SPEED WITHIN LIMITS.
   - 4.2. PRECIPITATION AND TEMPERATURE.
5. WELDING PROCEDURES SPECIFICATION FOLLOWED.
   - 5.1. SETTINGS ON WELDING EQUIPMENT
   - 5.2. TRAVEL SPEED
   - 5.3. SELECTED WELDING MATERIALS
   - 5.4. SHIELDING GAS TYPE/FLOW RATE
   - 5.5. PREHEAT APPLIED
   - 5.6. INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)
   - 5.7. PROPER POSITION (F, V, H, OH)
   - 5.8. INTERMIX OF FILLER METALS AVOIDED
6. WELDING TECHNIQUES
   - 6.1. INTERPASS AND FINAL CLEANING
   - 6.2. EACH PASS WITHIN PROFILE LIMITATIONS
   - 6.3. EACH PASS MEETS QUALITY REQUIREMENTS

STEEL INSPECTION **AFTER** WELDING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.4-3
1. CONTINUOUS INSPECTIONS
   - 1.1. SIZE, LENGTH, AND LOCATION OF ALL WELDS.
     - 1.1.1. SIZE, LENGTH, AND LOCATION OF ALL WELDS CONFORM TO THE REQUIREMENTS OF THE DETAIL DRAWINGS.
   - 1.2. WELDS MEET VISUAL ACCEPTANCE CRITERIA.
     - 1.2.1. CRACK PROHIBITION
     - 1.2.2. WELD/BASE-METAL FUSION
     - 1.2.3. CRATER CROSS SECTION
     - 1.2.4. WELD PROFILES
     - 1.2.5. WELD SIZE
     - 1.2.6. UNDERCUT
     - 1.2.7. POROSITY
   - 1.3. ARC STRIKES.
   - 1.4. K-AREA.
     - 1.4.1. WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS. (AISC 360 - TABLE N5.4-3)
   - 1.5. BACKING REMOVED, WELD TABS REMOVED AND FINISHED, AND FILLET WELDS ADDED WHERE REQUIRED.
   - 1.6. REPAIR ACTIVITIES.
   - 1.7. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER.
2. PERIODIC INSPECTIONS
   - 2.1. WELDS CLEANED.

STEEL INSPECTION **PRIOR TO** BOLTING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.6-1
1. CONTINUOUS INSPECTIONS
   - 1.1. MANUFACTURE'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS.
2. PERIODIC INSPECTIONS
   - 2.1. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.
   - 2.2. PROPER FASTENERS SELECTED FOR JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE).
   - 2.3. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL.
   - 2.4. CONNECTING ELEMENTS, INCLUDING APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.
   - 2.5. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS.

STEEL INSPECTION **DURING** BOLTING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.6-2
1. CONTINUOUS INSPECTIONS - N/A
2. PERIODIC INSPECTIONS
   - 2.1. FASTENER ASSEMBLIES OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED.
   - 2.2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO PRETENSIONING OPERATION.
   - 2.3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING.
   - 2.4. BOLTS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.

STEEL INSPECTION **AFTER** BOLTING - 2018 IBC 1705.2.1, AISC 360-16: TABLE C-N5.6-3
1. CONTINUOUS INSPECTIONS
   - 1.1. DOCUMENT ACCEPTANCE OR REJECTION OF ALL BOLTED CONNECTIONS.
2. PERIODIC INSPECTIONS - N/A

OTHER STEEL INSPECTIONS - 2018 IBC 1705.2.1, AISC 341-16: TABLES J8.1 & J10.1
1. CONTINUOUS INSPECTIONS
   - 1.1. ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL.
     - 1.1.1. VERIFY THE DIAMETER, GRADE, TYPE, AND LENGTH OF THE ANCHOR ROD OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDMENT PRIOR TO PLACEMENT OF CONCRETE.
2. PERIODIC INSPECTIONS - N/A

CONCRETE CONSTRUCTION INSPECTIONS

CONCRETE CONSTRUCTION - IBC TABLE 1705.3 (ACI 318 REFERENCES NOTED IN IBC TABLE)
1. CONTINUOUS INSPECTIONS
   - 1.1. ALL OTHER WELDING.
     - 1.1.1. VISUALLY INSPECT ALL WELDS EXCEPT AS NOTED BELOW IN ACCORDANCE WITH AWS D1.4.
   - 1.2. POST-INSTALLED ADHESIVE ANCHORS IN HORIZONTAL OR UPWARD INCLINED ORIENTATIONS.
     - 1.2.1. INSPECT AS REQUIRED PER APPROVED ICC-ES REPORT
     - 1.2.2. VERIFY THAT INSTALLER IS CERTIFIED FOR INSTALLATION OF HORIZONTAL AND OVERHEAD INSTALLATION APPLICATIONS
     - 1.2.3. INSPECT PROOF LOADING AS REQUIRED BY THE CONTRACT DOCUMENTS
   - 1.3. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.
     - 1.3.1. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TEST VERIFY THESE TESTS ARE PERFORMED BY QUALIFIED TECHNICIANS.
   - 1.4. INSPECT CONCRETE AND/OR SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.
     - 1.4.1. VERIFY PROPER APPLICATION TECHNIQUES ARE USED DURING CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.
2. PERIODIC INSPECTIONS
   - 2.1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.
     - 2.1.1. VERIFY PRIOR TO PLACING CONCRETE THAT REINFORCING IS OF SPECIFIED TYPE, GRADE AND SIZE; THAT IT IS FREE OF OIL, DIRT AND UNACCEPTABLE RUST; THAT IT IS LOCATED AND SPACED PROPERLY; THAT HOOKS, BENDS, TIES, STIRRUPS AND SUPPLEMENTAL REINFORCEMENT ARE PLACED CORRECTLY; THAT LAP LENGTHS, STAGGER AND OFFSETS ARE PROVIDED; AND THAT ALL MECHANICAL CONNECTIONS ARE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND/OR EVALUATION REPORT.
   - 2.2. REINFORCING BAR WELDING.
     - 2.2.1. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706
     - 2.2.2. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" IN ACCORDANCE WITH AWS D1.4
   - 2.3. CAST IN PLACE ANCHORS AND POST INSTALLED DRILLED ANCHORS IN DOWNWARD INCLINED ORIENTATIONS.
     - 2.3.1. VERIFY PRIOR TO PLACING CONCRETE THAT CAST IN PLACE ANCHORS AND POST INSTALLED DRILLED ANCHORS HAVE PROPER EMBEDMENT, SPACING AND EDGE DISTANCE.
   - 2.4. VERIFY USE OF REQUIRED MIX DESIGN.
     - 2.4.1. VERIFY THAT ALL MIXES USED COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS.
   - 2.5. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUE.
     - 2.5.1. INSPECT CURING, COLD WEATHER PROTECTION, AND HOT WEATHER PROTECTION PROCEDURES.
   - 2.6. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.
   - 2.7. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
   - 2.8. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.

MASONRY CONSTRUCTION INSPECTIONS

MASONRY CONSTRUCTION **AT START OF** CONSTRUCTION - IBC 1705.4, TMS 602 TABLE 4
1. CONTINUOUS INSPECTIONS - N/A
2. PERIODIC INSPECTIONS
   - 2.1. PROPORTIONS OF SITE-PREPARED MORTAR.
   - 2.2. GRADE, TYPE, AND SIZE OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS.

MASONRY CONSTRUCTION **PRIOR TO** GROUTING - IBC 1705.4, TMS 602 TABLE 4
1. CONTINUOUS INSPECTIONS - N/A
2. PERIODIC INSPECTIONS
   - 2.1. GROUT SPACE.
   - 2.2. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS.
   - 2.3. PROPORTIONS OF SITE-PREPARED GROUT.

MASONRY CONSTRUCTION **DURING** CONSTRUCTION - IBC 1705.4, TMS 602 TABLE 4
1. CONTINUOUS INSPECTIONS
   - 1.1. WELDING OF REINFORCEMENT
   - 1.2. PLACEMENT OF GROUT IS IN COMPLIANCE.
2. PERIODIC INSPECTIONS
   - 2.1. MATERIALS AND PROCEDURES IN ACCORDANCE WITH THE APPROVED SUBMITTALS.
   - 2.2. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION.
   - 2.3. SIZE AND LOCATION OF STRUCTURAL MEMBERS.
   - 2.4. TYPE, SIZE, AND PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS, INCLUDING DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.
   - 2.5. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (<40° F) OR HOT WEATHER (>90° F).

GEOTECHNICAL AND SOILS INSPECTIONS

SOILS INSPECTIONS - IBC 1705.6
1. CONTINUOUS INSPECTIONS
   - 1.1. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.
2. PERIODIC INSPECTIONS
   - 2.1. MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.
   - 2.2. EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.
   - 2.3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.
   - 2.4. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.
     - 2.4.1. DURING FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL VERIFY THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.

**TYPICAL CONCRETE COVER**

| EXPOSURE | MEMBER | REINF. | COVER |
|---|---|---|---|
| CAST AGAINST AND PERMANENTLY IN CONTACT WITH SOIL | ALL | ALL | 3" |
| EXPOSED TO WEATHER OR IN CONTACT WITH GROUND | ALL | #6 - #18 | 2" |
| | | #5 AND SMALLER | 1 1/2" |
| NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND | SLABS, JOISTS, AND WALLS | #14, #18 | 1 1/2" |
| | | #11 AND SMALLER | 3/4" |
| | BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES | PRIMARY REINF., STIRRUPS, TIES, TIES, HOOPS | 1 1/2" |

**REINFORCEMENT TENSION LAPS, EMBEDMENT, AND HOOK LENGTHS**

| BAR SIZE | CLASS "A" LAP (INCHES) TOP BARS | CLASS "A" LAP (INCHES) OTHER BARS | CLASS "B" LAP (INCHES) TOP BARS | CLASS "B" LAP (INCHES) OTHER BARS | HOOKS (INCHES) |
|---|---|---|---|---|---|
| #3 | 19 | 15 | 24 | 19 | 8 |
| #4 | 25 | 19 | 32 | 25 | 10 |
| #5 | 31 | 24 | 40 | 31 | 12 |
| #6 | 37 | 29 | 48 | 37 | 15 |
| #7 | 54 | 42 | 70 | 54 | 17 |
| #8 | 62 | 48 | 80 | 62 | 19 |
| #9 | 70 | 54 | 90 | 70 | 22 |
| #10 | 77 | 60 | 100 | 77 | 24 |
| #11 | 85 | 66 | 110 | 85 | 26 |

**NOTES:**
1. $f'_c$ = 4,000 psi, $F_y$ = 60,000 psi
2. LENGHTS SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF ACI 318-14 FOR UNCOATED BARS ENCLOSED BY PROPERLY SPACED TIES OR STIRRUPS.
3. CLASS "A" LAPS APPLY WHEN BAR LAPS ARE STAGGERED TO LAP HALF THE BARS AT ONE LOCATION OR WHEN BARS ARE LAPPED AT THE LOCATION OF MINIMUM STRESS IN THE BARS.
4. CLASS "B" LAPS APPLY WHEN ALL BARS ARE LAPPED AT A LOCATION OF MAXIMUM STRESS IN THE BARS.
5. TOP BARS ARE HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF CONCRETE IS CAST BELOW THE REINFORCEMENT.
6. LAP AND EMBEDMENT LENGTHS HAVE THE SAME VALUES.
7. CLEAR SPACING OF REINFORCEMENT SHALL NOT BE LESS THAN 1" OR 1 BAR DIAMETER. IF THE CLEAR SPACING IS LESS THAN SPECIFIED, MULTIPLY THE ABOVE LENGTHS BY 1.5.
8. CLEAR COVER FOR REINFORCING SHALL NOT BE LESS THAN 1 BAR DIAMETER OR AS SPECIFIED IN SECTION 20.6 OF ACI 318-14. IF THE CLEAR COVER IS LESS THAN SPECIFIED, MULTIPLY THE ABOVE LENGTHS BY 1.5.
9. MULTIPLY THE ABOVE LENGTHS BY 1.3 FOR CONCRETE WITH LIGHTWEIGHT AGGREGATE.
10. MULTIPLY THE ABOVE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCING.
11. FOR CONCRETE STRENGTHS OTHER THAN 4,000 PSI, MULTIPLY THE ABOVE LENGTHS BY $(4{,}000)^{1/2)} / (f'_c)^{1/2)}$.

**STANDARD HOOK GEOMETRY**

**TYPICAL TENSION BARS**

| TYPE | BAR SIZE | MIN. BEND DIA. | EXTENSION |
|---|---|---|---|
| 90-DEGREE HOOK | #3 - #8 | $6d_b$ | $12d_b$ |
| | #9 - #11 | $8d_b$ | |
| | #14, #18 | $10d_b$ | |
| 180-DEGREE HOOK | #3 - #8 | $6d_b$ | Greater of 4d$_b$ and 2.5" |
| | #9 - #11 | $8d_b$ | |
| | #14, #18 | $10d_b$ | |

**STIRRUPS, TIES, AND HOOPS**

| TYPE | BAR SIZE | MIN. BEND DIA. | EXTENSION |
|---|---|---|---|
| 90-DEGREE HOOK | #3 - #5 | $4d_b$ | Greater of 6d$_b$ and 3" |
| | #6 - #8 | $6d_b$ | $12d_b$ |
| 135-DEGREE HOOK | #3 - #5 | $6d_b$ | Greater of 6d$_b$ and 3" |
| | #6 - #8 | $8d_b$ | |
| 180-DEGREE HOOK | #3 - #8 | $6d_b$ | Greater of 4db and 2.5" |
| | #9 - #11 | $8d_b$ | |

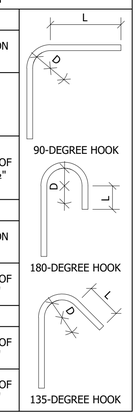
**STANDARD HOOK GEOMETRY**

**TYPICAL TENSION BARS**

| TYPE | BAR SIZE | MIN BEND DIA (D) | EXTENSION (L) |
|---|---|---|---|
| 90-DEGREE HOOK | #3 - #8 | $6d_b$ | $12d_b$ |
| | #9 - #11 | $8d_b$ | |
| | #14, #18 | $10d_b$ | |
| 180-DEGREE HOOK | #3 - #8 | $6d_b$ | GREATER OF 4$d_b$ & 2½" |
| | #9 - #11 | $8d_b$ | |
| | #14, #18 | $10d_b$ | |

**STIRRUPS, TIES, & HOOPS**

| TYPE | BAR SIZE | MIN BEND DIA (D) | EXTENSION (L) |
|---|---|---|---|
| 90-DEGREE HOOK | #3 - #5 | $4d_b$ | GREATER OF 6$d_b$ & 3" |
| | #6 - #8 | $6d_b$ | $12d_b$ |
| 135-DEGREE HOOK | #3 - #5 | $6d_b$ | GREATER OF 6$d_b$ & 3" |
| | #6 - #8 | $8d_b$ | |
| 180-DEGREE HOOK | #3 - #8 | $6d_b$ | GREATER OF 6$d_b$ & 3" |
| | #9 - #11 | $8d_b$ | |




| # | DATE | DESCRIPTION | BY |
|---|---|---|---|

Bartlett&West
1200 SW EXECUTIVE DRIVE - TOPEKA, KS 66615-3850
PHONE 785.272.2252 - FAX 785.273.8735
www.bartlettwest.com

# ODOR CONTROL IMPROVEMENTS SPECIAL INSPECTIONS

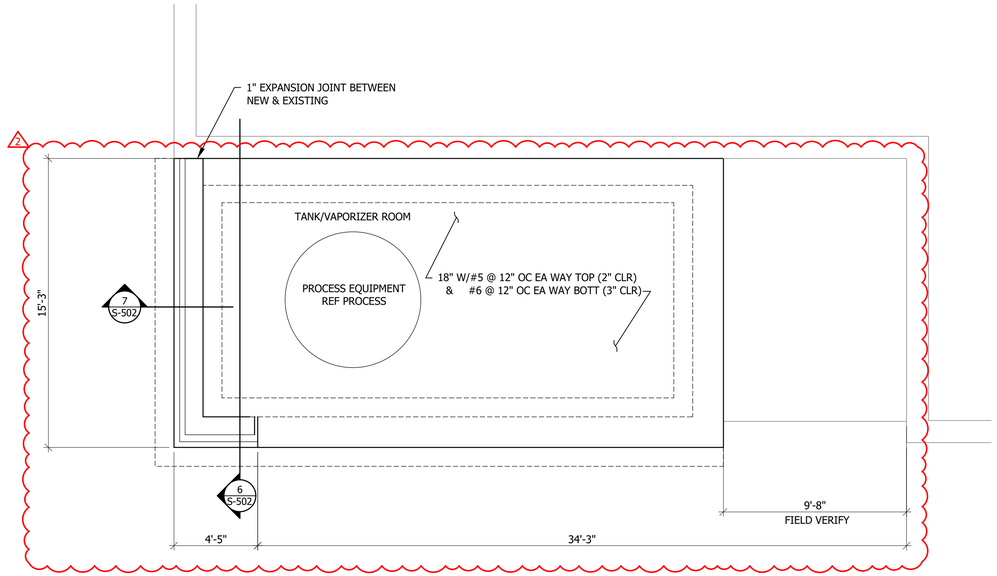
ODOR CONTROL IMPROVEMENTS
CENTRAL PARK PUMP STATION
TOPEKA, KANSAS

MICHAEL J. NEUBERT LICENSED # 20097 4-16-26 KANSAS PROFESSIONAL ENGINEER

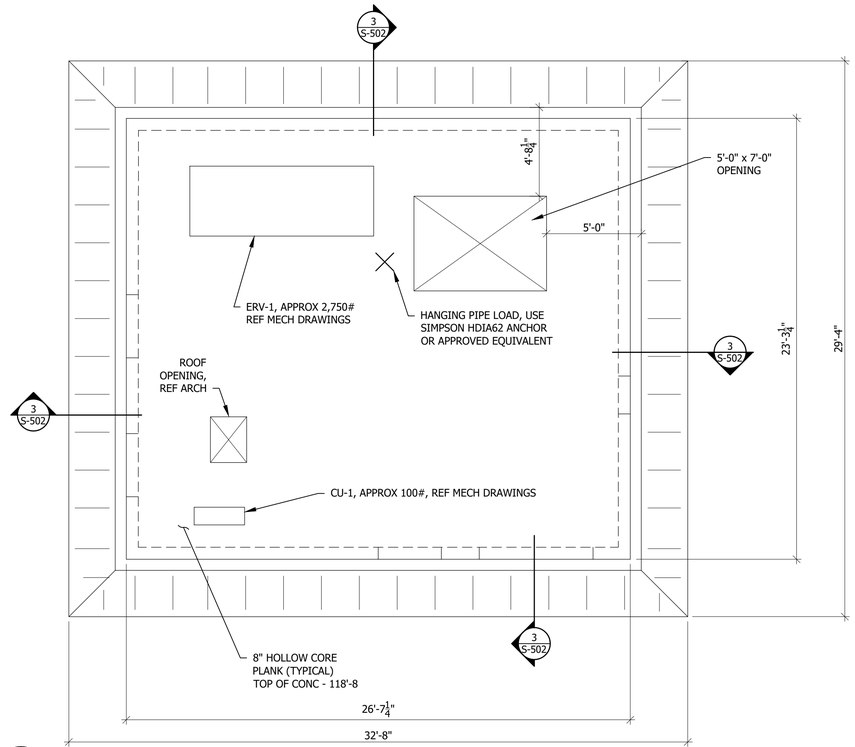
| | |
|---|---|
| DESIGNED BY: | LDM |
| DRAWN BY: | JRW |
| APPROVED BY: | MJN |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | S-002 |
| SHEET NO: | 16 of 53 |



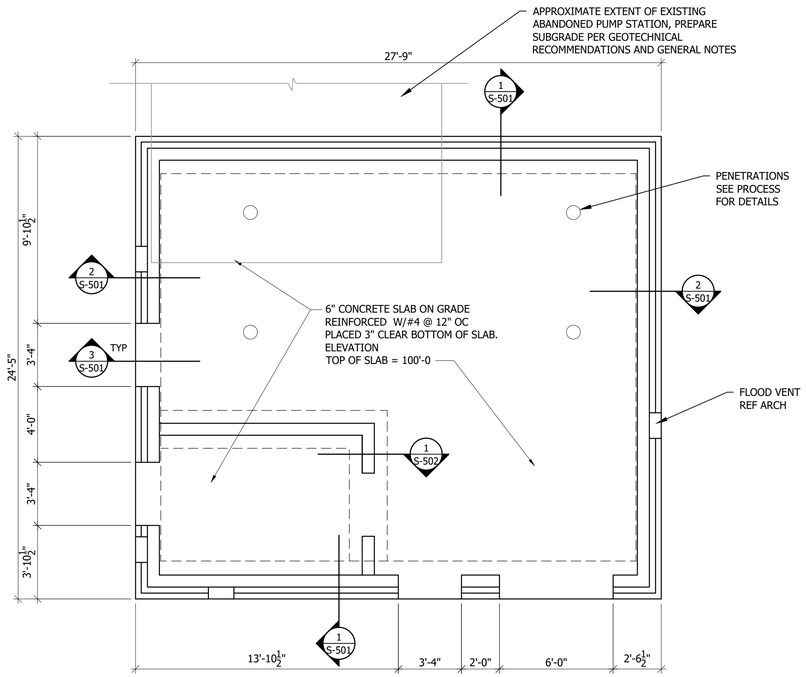
Last edit on 9/4/2025 8:01 AM by JRW0381 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_S-100.dwg Layout Name: SPECIAL INSPECTIONS Plotted By: JRW0381 Plotted on: 9/4/2025 11:05:50 AM



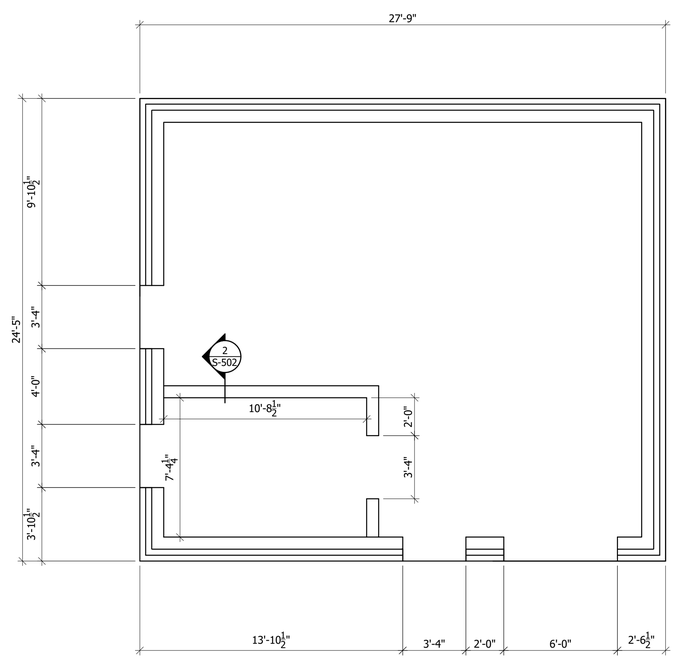

## SCREENWALL AT EXISTING SLAB PLAN
SCALE: 1/4"=1'-0"




## SUPEROXYGENATION SYSTEM CONTROLS ROOM ROOF FRAMING PLAN
SCALE: 1/4"=1'-0"




## SUPEROXYGENATION SYSTEM CONTROLS ROOM FOUNDATION PLAN
SCALE: 1/4"=1'-0"




## SUPEROXYGENATION SYSTEM CONTROLS ROOM FIRST FLOOR FRAMING PLAN
SCALE: 1/4"=1'-0"

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 11/13/2025 | ADDENDUM 2 | LDM |

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# ODOR CONTROL IMPROVEMENTS
# STRUCTURAL FRAMING PLANS

ODOR CONTROL IMPROVEMENTS
CENTRAL PARK PUMP STATION
TOPEKA, KANSAS

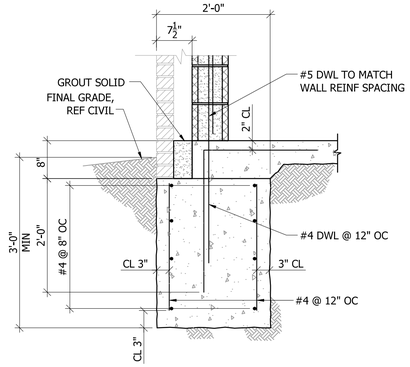
MICHAEL J. NEUFELDT LICENSED # 20097 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| XX | LDM |
| DRAWN BY: | JRW |
| APPROVED BY: | MJN |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | S-101 |
| SHEET NO: | 17 of 52 |

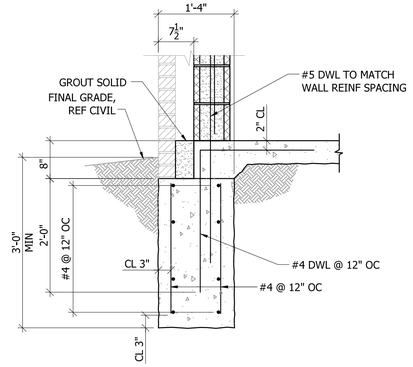


Last edit on: 9/4/2025 1:59 PM by: LDM02009 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_S-100.dwg Layout Name: 1ST FLOOR & ROOF FRAMING PLANS Plotted By: LDM02009 Plotted on: 11/13/2025 12:24:46 PM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.




1 NORTH & SOUTH FOUNDATION WALL DETAIL
NOT TO SCALE




2 EAST & WEST FOUNDATION WALL DETAIL
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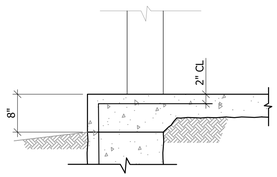
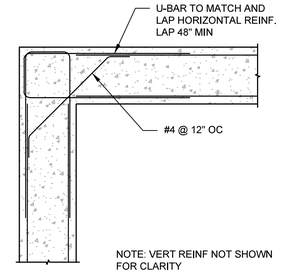
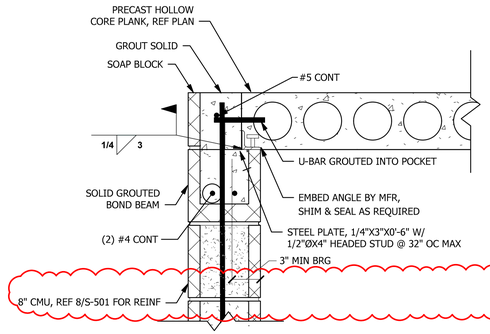



3 TYPICAL DETAIL -
TOP OF FOUNDATION WALLS AT DOORS
NOT TO SCALE




4 TYPICAL CORNER REINFORCING DETAIL
NOT TO SCALE




NOTE: ALL METALS EXPOSED TO INTERIOR SPACE SHALL BE STAINLESS STEEL

5 HOLLOW CORE PLANK DETAIL 1
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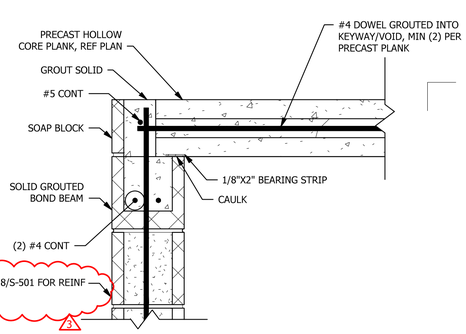
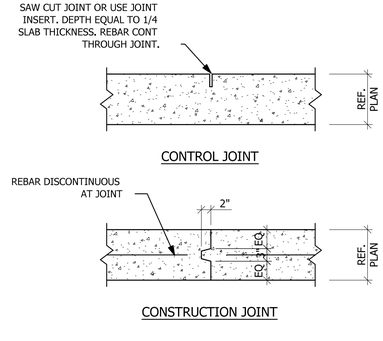


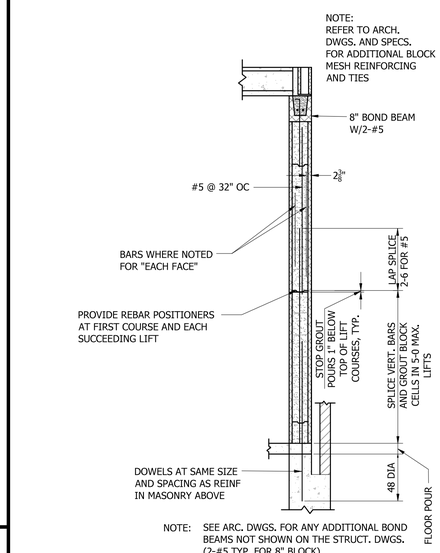

NOTE: ALL METALS EXPOSED TO INTERIOR SPACE SHALL BE STAINLESS STEEL

6 HOLLOW CORE PLANKS DETAIL 2
NOT TO SCALE

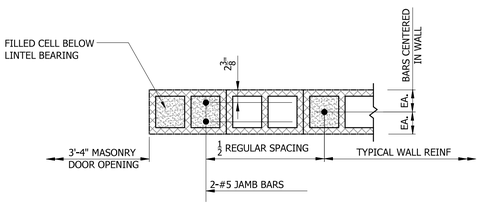



NOTE: SEE GENERAL STRUCTURAL NOTES AND SLAB JOINT PLAN FOR MORE INFORMATION

7 TYPICAL SLAB CONTROL DETAIL
NOT TO SCALE

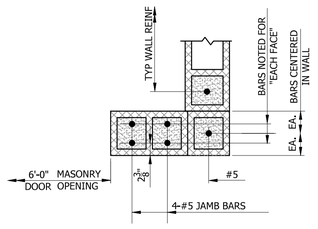



8 TYPICAL DETAIL - REINFORCED MASONRY WALL
NOT TO SCALE



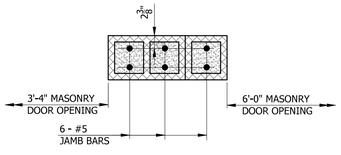

NOTE: JAMB REINFORCING BARS TO BE PROVIDED FOR FULL HEIGHT OF WALL SPLICED IN 5-0 LIFTS.

9 TYPICAL REINFORCED MASONRY JAMB DETAIL
NOT TO SCALE



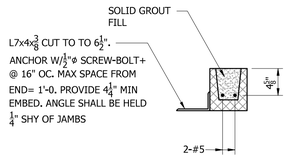

NOTE: JAMB REINFORCING BARS TO BE PROVIDED FOR FULL HEIGHT OF WALL SPLICED IN 5-0 LIFTS.

10 TYPICAL REINFORCED MASONRY JAMB DETAIL
NOT TO SCALE




NOTE: JAMB REINFORCING BARS TO BE PROVIDED FOR FULL HEIGHT OF WALL SPLICED IN 5-0 LIFTS.

11 TYPICAL REINFORCED MASONRY JAMB DETAIL
NOT TO SCALE




NOTE: PROVIDE 8" BEARING EACH END

12 CONCRETE BLOCK LINTEL TYPES
NOT TO SCALE

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 3 | 11/19/2025 | ADDENDUM 3 | LDM |

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# ODOR CONTROL IMPROVEMENTS STRUCTURAL DETAILS

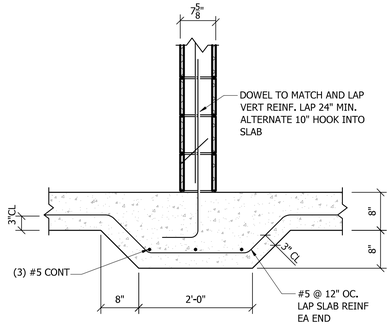
ODOR CONTROL IMPROVEMENTS
CENTRAL PARK PUMP STATION
TOPEKA, KANSAS

MICHAEL J. NEUFELD LICENSED # 20097 4-16-26 KANSAS PROFESSIONAL ENGINEER

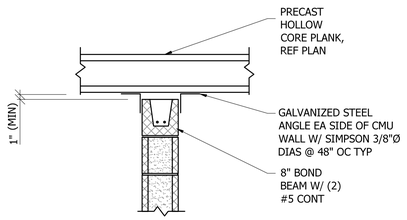
| | |
|---|---|
| DESIGNED BY: | LDM |
| DRAWN BY: | JRW |
| APPROVED BY: | MJN |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | S-501 |
| SHEET NO: | 18 of 52 |



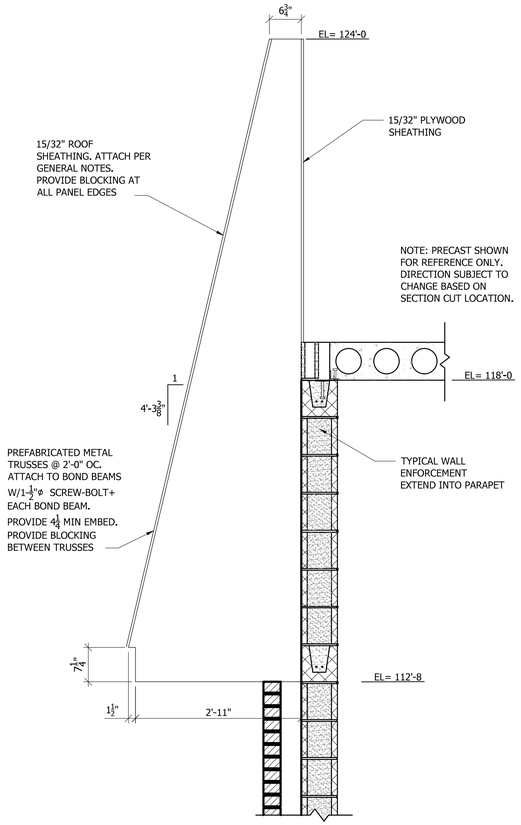
Last edit on: 11/19/2025 3:58 PM by: LDM02009 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_S-100.dwg Layout Name: STRUCTURAL DETAILS Plotted By: LDM02009 Plotted on: 11/19/2025 3:07:31 PM



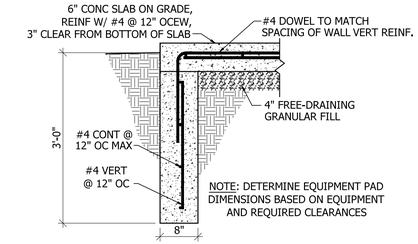

## 1 THICKENED SLAB UNDER INTERIOR WALL
NOT TO SCALE



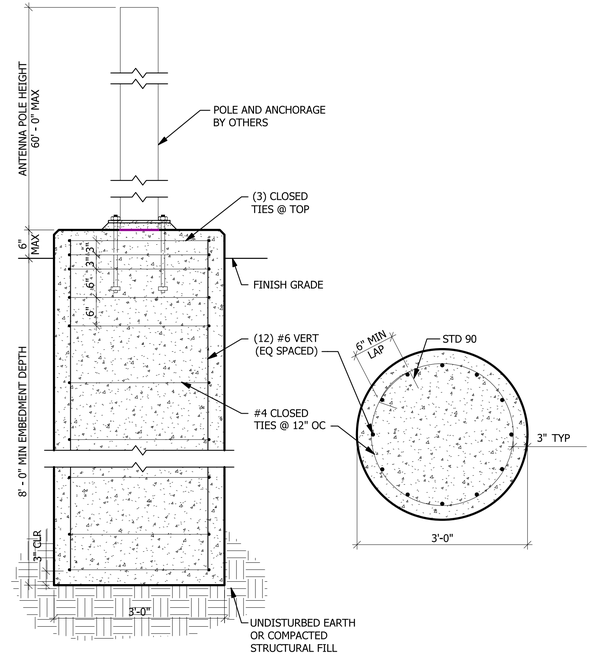

## 2 FRAMING DETAIL
NOT TO SCALE



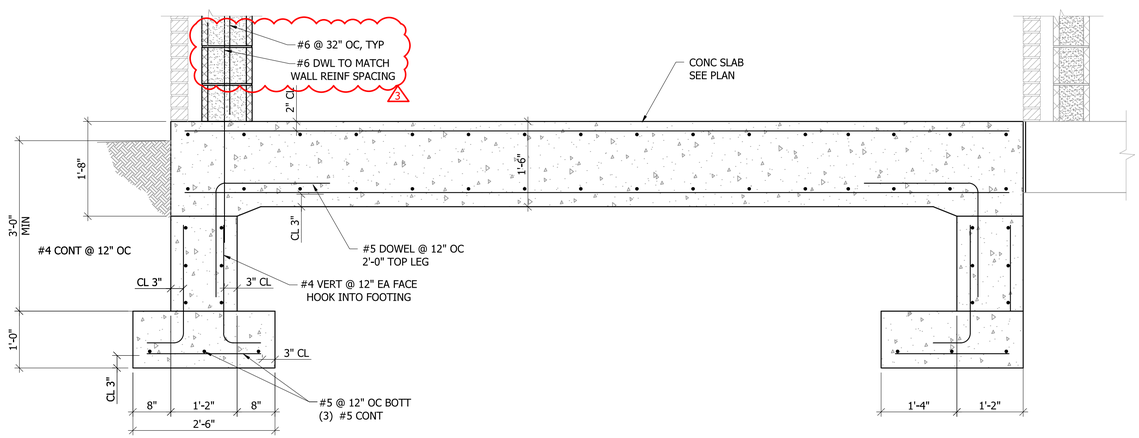

## 3 SECTION A PREFABRICATED METAL TRUSS PROFILE DETAIL
NOT TO SCALE




## 4 EQUIPMENT PAD DETAIL
NOT TO SCALE




## 5 ANTENNA BASE DETAIL
NOT TO SCALE

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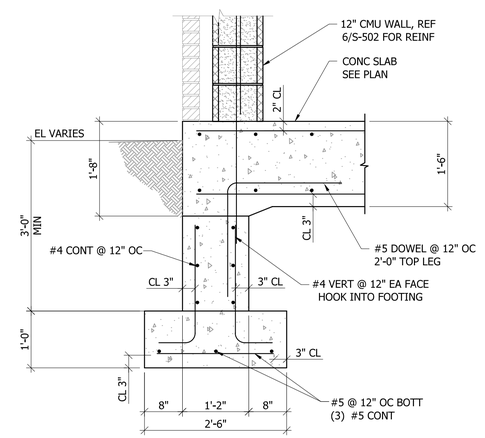


## 7 SECTION
NOT TO SCALE

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 11/13/2025 | ADDENDUM 2 | LDM |
| 3 | 11/19/2025 | ADDENDUM 3 | LDM |

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# ODOR CONTROL IMPROVEMENTS STRUCTURAL DETAILS

ODOR CONTROL IMPROVEMENTS
CENTRAL PARK PUMP STATION
TOPEKA, KANSAS

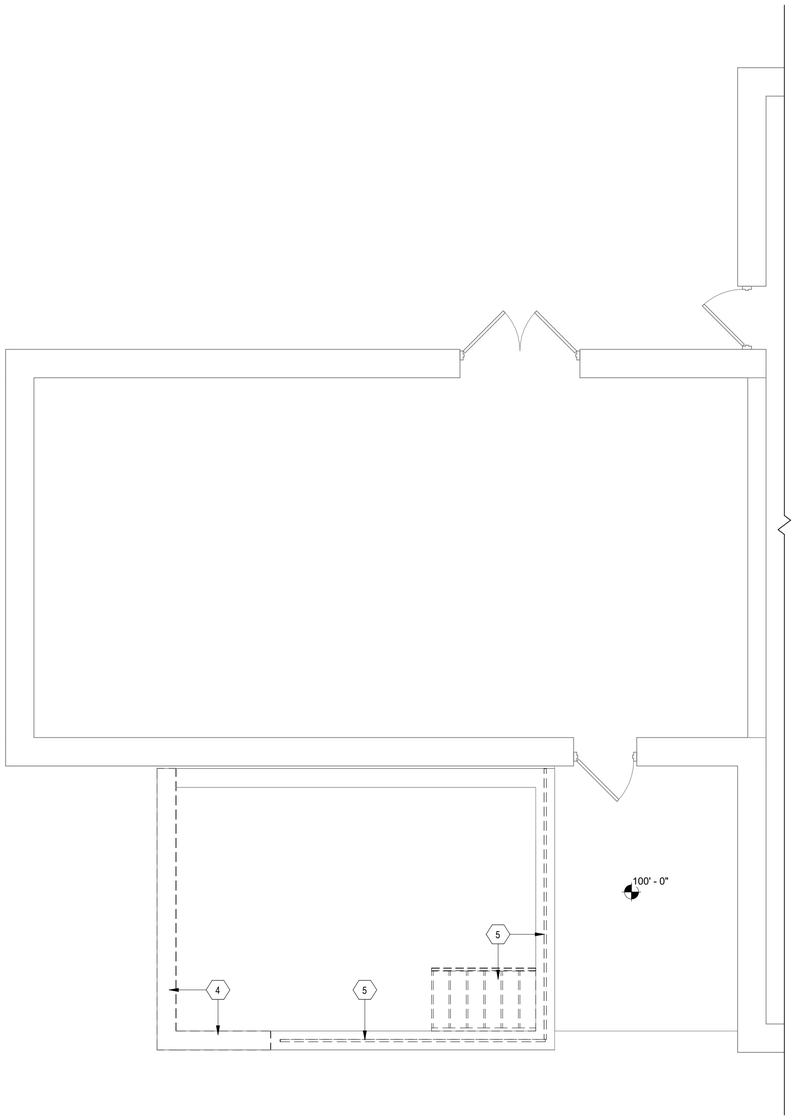
MICHAEL J. NEUFELD LICENSED # 20097 4-16-26 KANSAS PROFESSIONAL ENGINEER

| | |
|---|---|
| DESIGNED BY: | LDM |
| DRAWN BY: | JRW |
| APPROVED BY: | MJN |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | ---- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | S-502 |
| SHEET NO: | 19 of 52 |

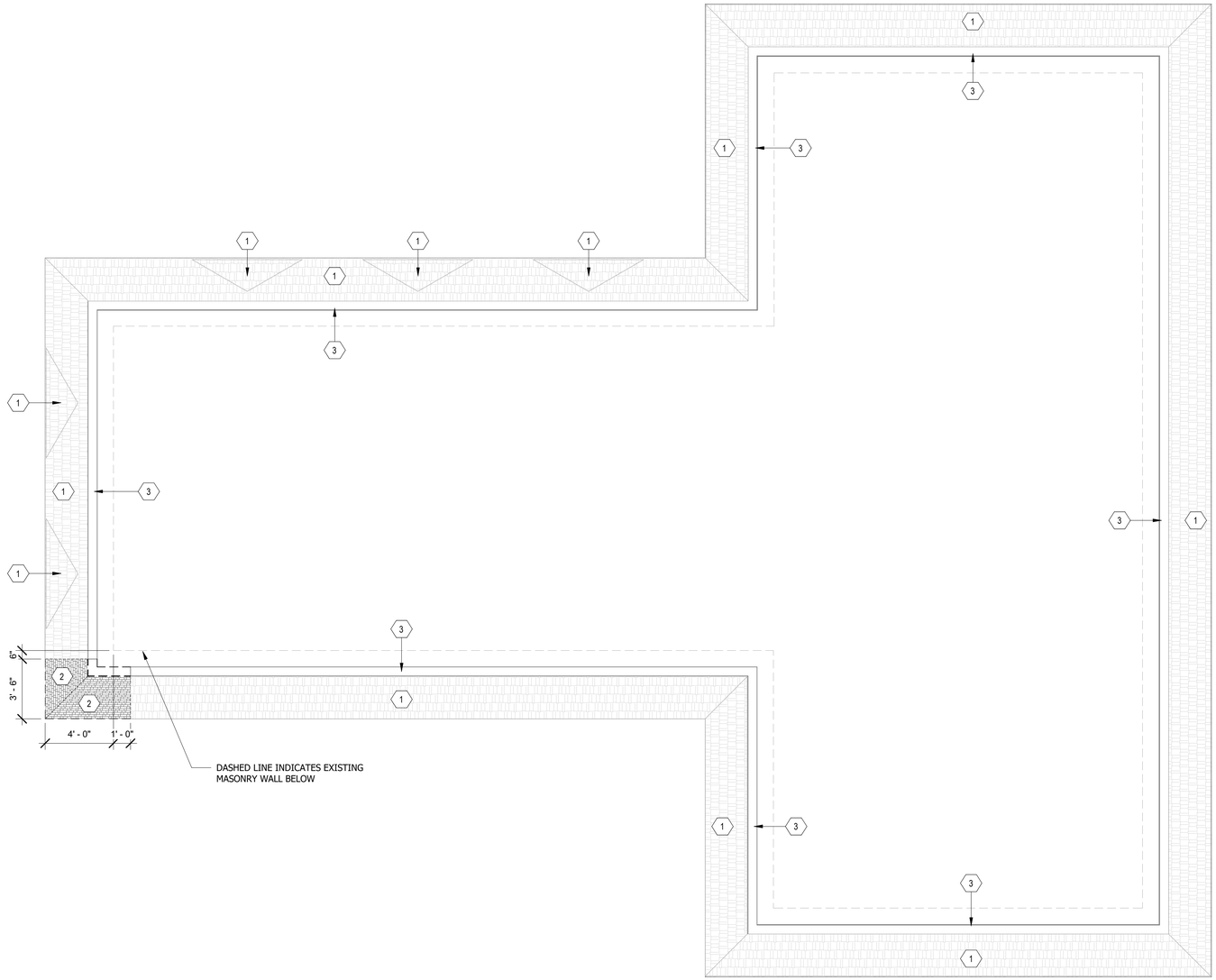


Last edit on: 11/13/2025 3:58 PM by: LDM02009 Drawing Name: W:\Proj\19000\19637\19637.011\AutoCad\Plan Set\19637.011_S-100.dwg Layout Name: S-502 Plotted By: LDM02009 Plotted on: 11/19/2025 3:06:51 PM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.




1 FIRST FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"




2 ROOF DEMO PLAN
SCALE: 1/4" = 1'-0"

## REFERENCE NOTES:

1. REMOVE EXISTING ASPHALT SHINGLES, PREP SUBSTRATE TO RECEIVE NEW PARAPET/ ROOF FINISH.
2. DEMO PORTION OF PARAPET STRUCTURE, COPING, FASCIA AND ALUMINUM TRIM. EXISTING MASONRY WALL, ATTACHED METAL STUDS AND ROOFING TO REMAIN. PROTECT DURING CONSTRUCTION.
3. DEMO EXISTING METAL COPING, PREP TO RECEIVE NEW COPING, TYP.
4. DEMO EXISTING SCREEN WALL.
5. DEMO EXISTING STAIR AND RAILINGS.

## GENERAL NOTES:

1. CONTRACTOR(S) TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND/OR CONSTRUCTION.
2. CONTRACTOR(S) TO PROTECT EXISTING FINISHES TO REMAIN. DAMAGING TO EXISTING FINISHES BECOMES THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE.

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|

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# ODOR CONTROL IMPROVEMENTS
# CENTRAL PARK PUMP STATION
# DEMO PLAN

ODOR CONTROL IMPROVEMENTS
TOPEKA, KANSAS

BETH ANNE VALDIVIA
LICENSED
04/16/2026
7369
KANSAS
ARCHITECT

| | |
|---|---|
| DESIGNED BY: | JD |
| DRAWN BY: | JD |
| APPROVED BY: | BV |
| DESIGN PROJ: | 19637.011 |
| CONST PROJ: | --- |
| SCALE: | AS NOTED |
| DATE: | SEPTEMBER 2025 |
| DRAWING NO: | A-100 |
| SHEET NO: | 20 of 52 |



Drawing Location: C:\Users\jd1063\Documents\19637.011 Odor Control Improvements - Arch v22_jdv.rvt